Gas Journal

Vol. 253. 100th Year. LONDON, MARCH 17, 1948. No. 4424. Price 1/-

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MAR 1948
DETROIT

ASCOT gas water heaters are enlisted in the Nation's service in an all-out effort to make fuel supplies go round. Read what the British Gas Council says in its report to the Chancellor of the Exchequer :—

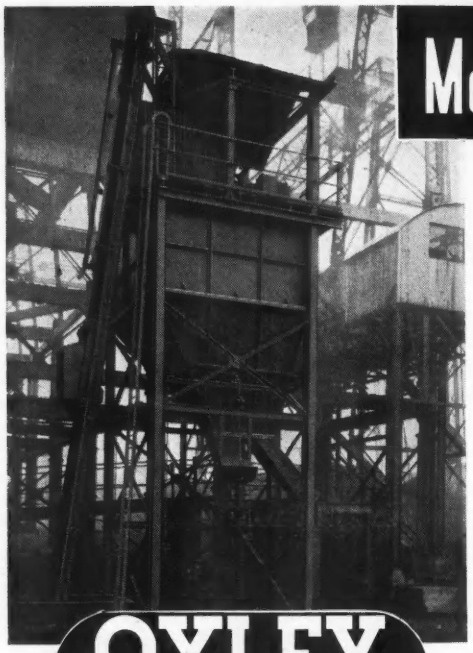
"In the interests of fuel economy, hot water should be provided by the most efficient means available, namely, the water heater which has been developed expressly for the purpose and none other."

Ascot heaters save fuel because they give hot water *when* and *where* it is needed.

ASCOT

A MILLION ASCOT GAS WATER HEATERS ARE HELPING IN THE BATTLE TO SAVE FUEL

ASCOT GAS WATER HEATERS LIMITED · 43 PARK STREET LONDON · W1 · GRO 4491



Mechanical Handling Plant

for

COAL, COKE OR OTHER BULK MATERIALS

We are Specialists in all Types of Gasworks Plant

ELEVATORS AND CONVEYORS

●

WELDED STEEL PURIFIERS AND GASHOLDERS

●

We can offer expert advice, a complete design service and can undertake a very wide variety of welded constructional work.

The illustration shows a mild steel welded ash bunker, of 18 tons capacity, fitted with radial cut-off doors. The skip bucket is of 7 cwt. capacity with electrical timing gear for automatic tipping and return. Bucket travel speed is 60 ft. per minute.

OXLEY ENGINEERING CO. LTD.

OXLEY ENGINEERING CO. LTD., HUNSLET, LEEDS 10

Telephone: LEEDS 32521 *Telegrams:* OXBROS, LEEDS

London Office: WINCHESTER HOUSE, OLD BROAD STREET, LONDON, E.C. 2 *Telephone:* London Wall 3731 *Telegrams:* Asbengpro, Stock, London

RECIPROCATING COMPRESSORS

for Gas or Air

High Speed
Vertical Reciprocating type

Easy Accessibility to Working Parts

Robust Construction and of the very latest design

Working parts of ample proportions
Perfect Balance

The Compressor illustrated is a Single-Crank Machine fitted with splash lubrication, water cooled cylinders and intercooler and hand unloading device. Capacity—500 cubic feet per hour, against 150 lbs. pressure and running at 400 r.p.m.

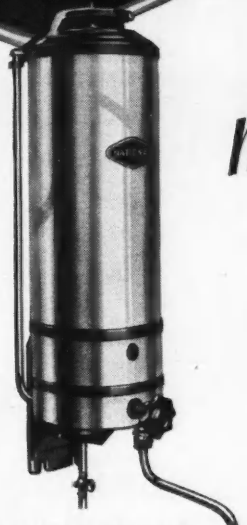
THE BRYAN DONKIN Co. Ltd.

ENGINEERS & IRONFOUNDERS CHESTERFIELD

Members of the Society of British Gas Industries

HARD WATER AREAS

NEED NATIONAL WATER HEATERS



Minimum Maintenance!

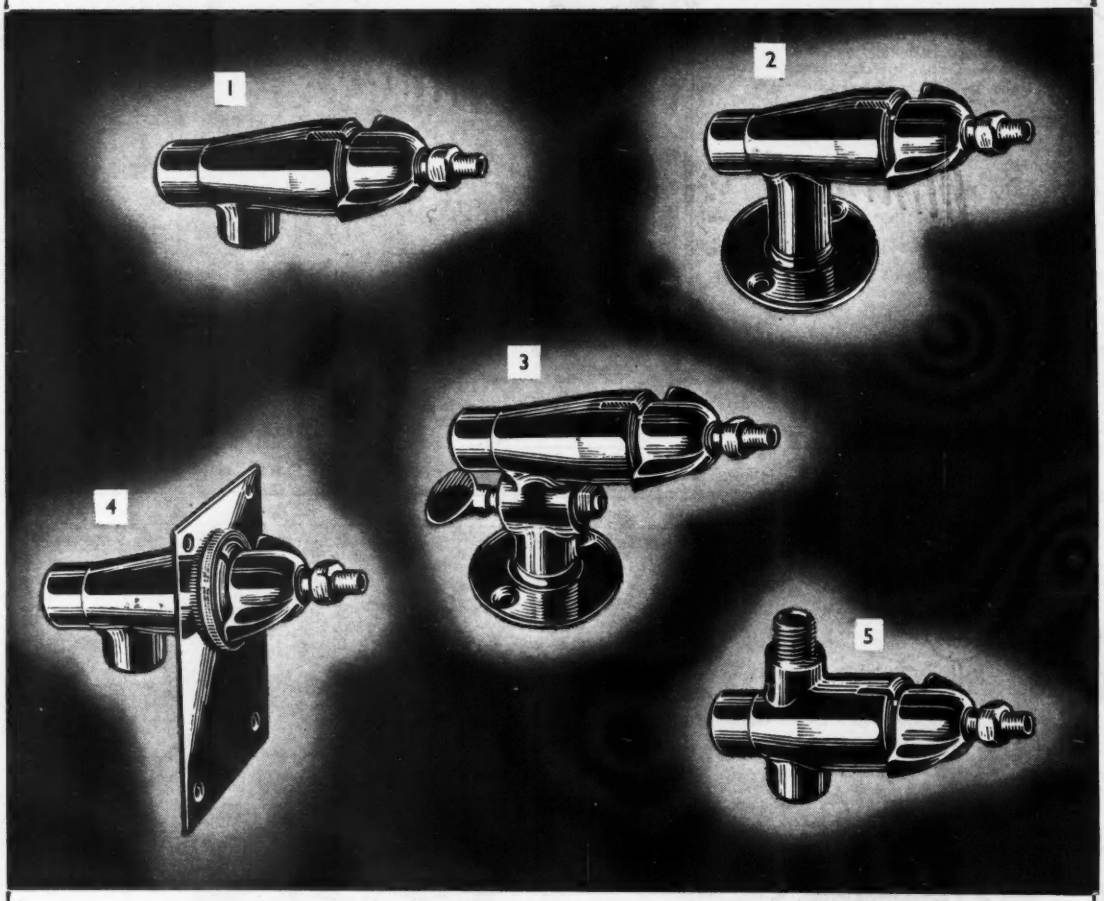
NATIONAL GAS WATER HEATER COMPANY, WARWICK ROAD, GREET, BIRMINGHAM, 11

.. a G.G. *you can always depend upon!*

GEORGE GLOVER OF CHELSEA

Issued by George Glover & Co., Ltd., 122 King's Road, Chelsea, London, S.W.3.

When 'Standard' is above standard



All 5 types are hot pressings with ¼" inlet B.S.P. Thread

All five plug-in gas connectors in the Sugg range conform to standards in design and finish as stipulated by the gas industry — yet a Sugg product is different. The fine quality of the material used, the little extra care in machining, close limits that are made still closer, meticulous attention to finish ; all reflect a pride of craftsmanship not usually associated with bulk produced articles. This pride is justified by the many thousands of Sugg components issued from the Westminster factories each week. Early delivery is now a possibility.

SUGG WESTMINSTER **PLUG-IN GAS CONNECTORS**

VIC. 3211

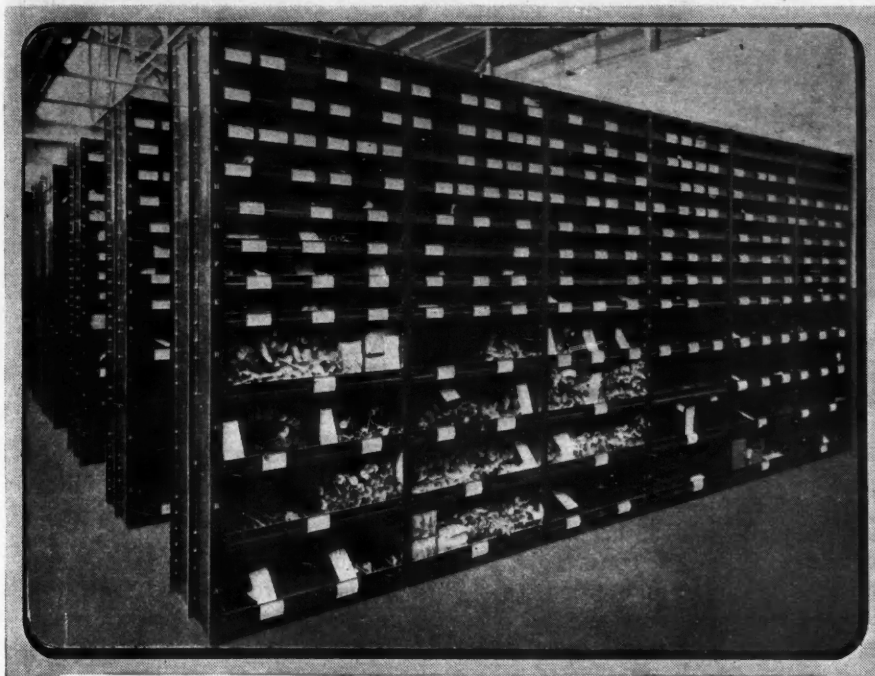
Side Discharge Wagon Tippler handling 12 ton Wagons.

DRAG SCRAPER & ENGINEERING COMPANY • LIMITED

Designers and Suppliers of SPECIAL Mechanical Handling Plant for Conveying, Storing and Reclaiming Bulk Material.

Proposals prepared to meet individual requirements.

14-18 HIGH HOLBORN, LONDON, W.C.1 Phone: Chancery 8521-8522 Grams: Deessee, Holb. London.



Yours the problem-Harveys the answer!

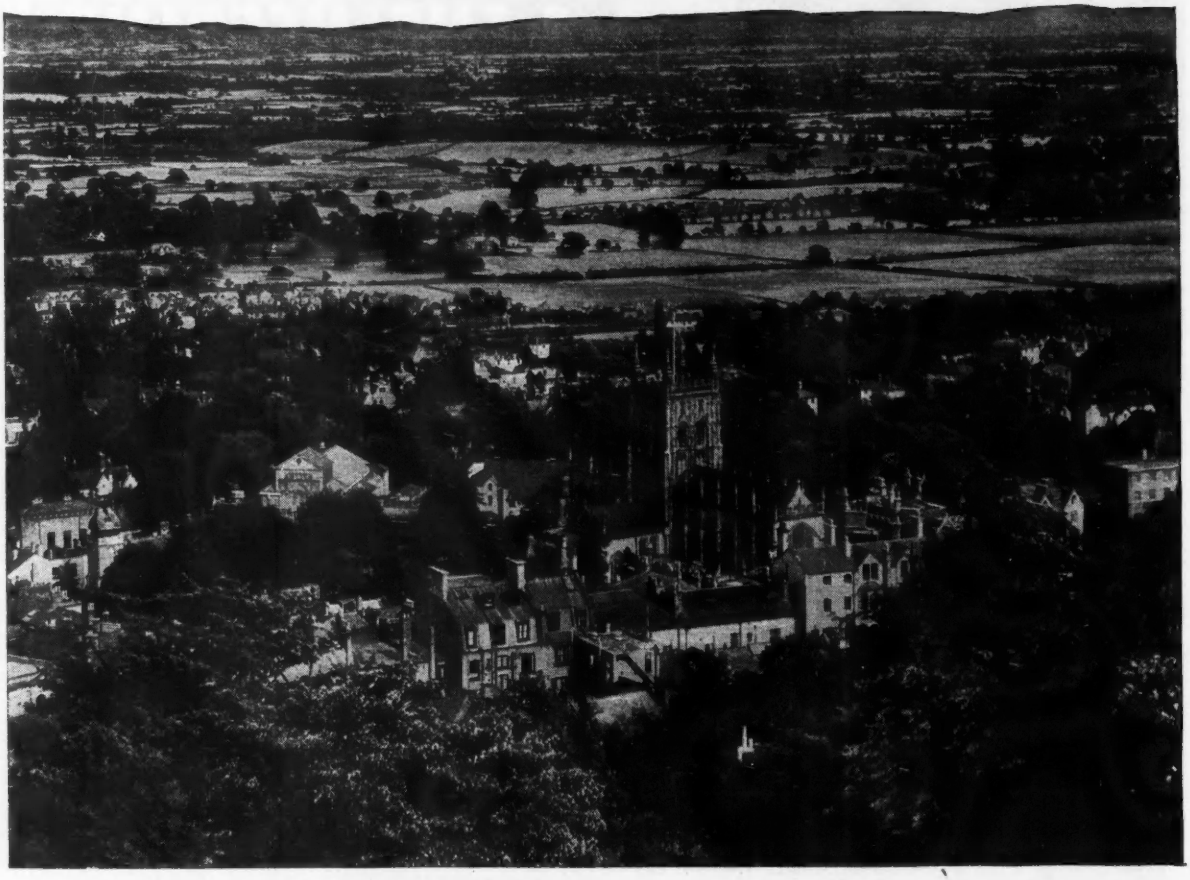
For all Forms of Steel Storage Equipment

Harvey Steel Equipment, whilst being Fire-resisting, Hygienic and Vermin-proof, also possesses the added advantage of perpetual durability and security. Adjustable Storage Bins can be arranged to form a stack giving accommodation exactly as required. No waste space. It can be dismantled and re-erected as often as desired without depreciation. Full details of the complete range are shown in catalogue No. G.J. 690.

Harvey

G. A. Harvey & Co. (London) Ltd. Woolwich Road, London, S.E.7

WORCESTERSHIRE CLAY



Whatever the district, 'KUTERLON' copper tubing gives greatest resistance to corrosion

Every type of soil corrodes metal to some extent. It is essential, therefore, that underground gas supply systems be constructed of tubes with the longest and strongest resistance to all types of corrosion.

Copper tubes best meet these requirements, and 'Kuterlon' has additional properties which make it ideal for such installations. 'Kuterlon' tube systems can be assembled by semi-skilled labour, and, with only a few tools, worked entirely by hand on the site. Installation costs are therefore low.

'Kuterlon' tubes do not rust. They are sufficiently strong to withstand soil pressures, and to carry their own weight over wide spans.

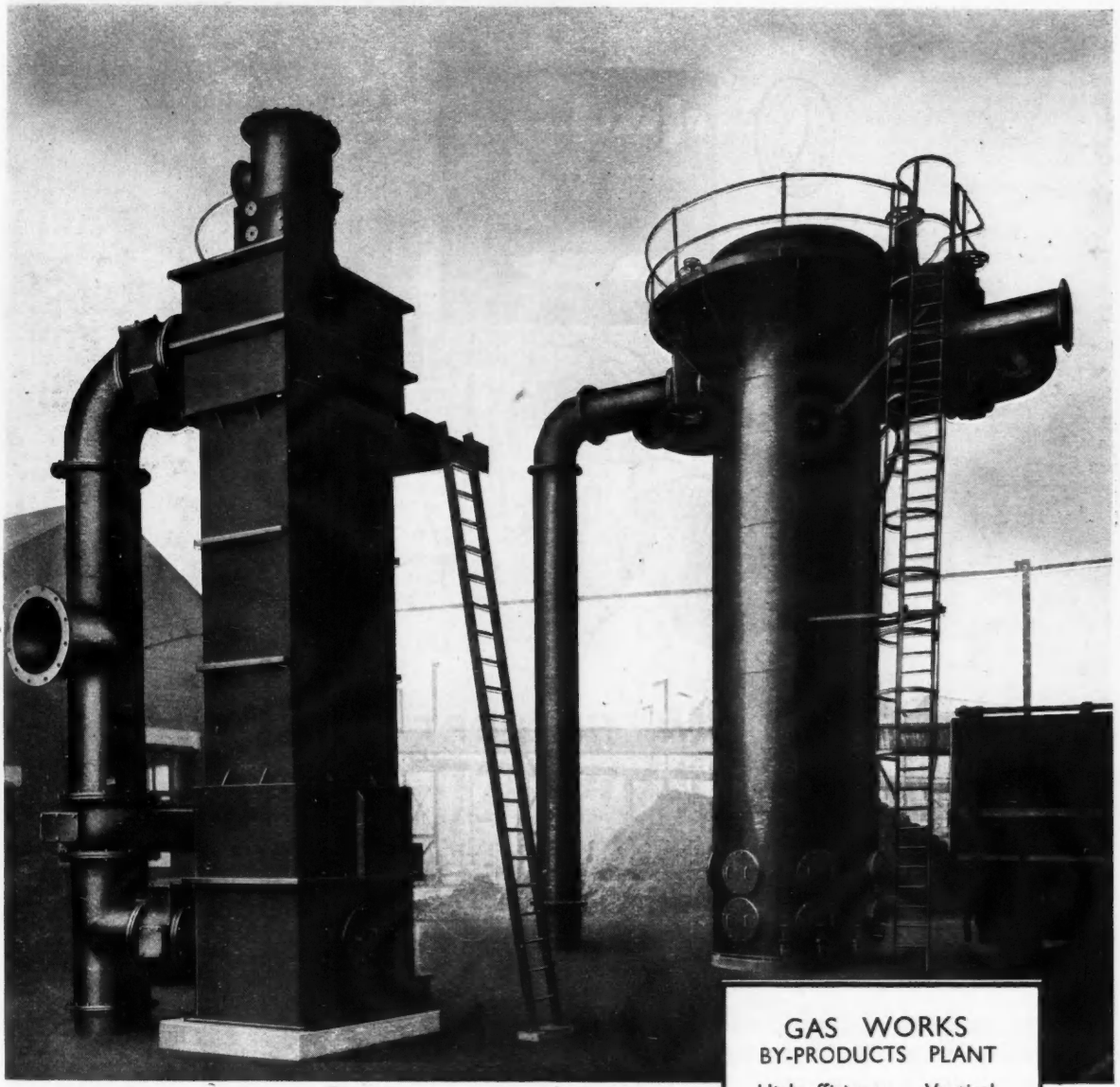
'Kuterlon' tubes for underground gas services are supplied in straight lengths up to 20 feet. Further details may be had on request.

ICI

Supplies are at present restricted, but everything is being done to meet the increasing demand.

IMPERIAL CHEMICAL INDUSTRIES LTD., LONDON, S.W.1

M. 110G



ELECTRO DETARRERS & CONDENSERS

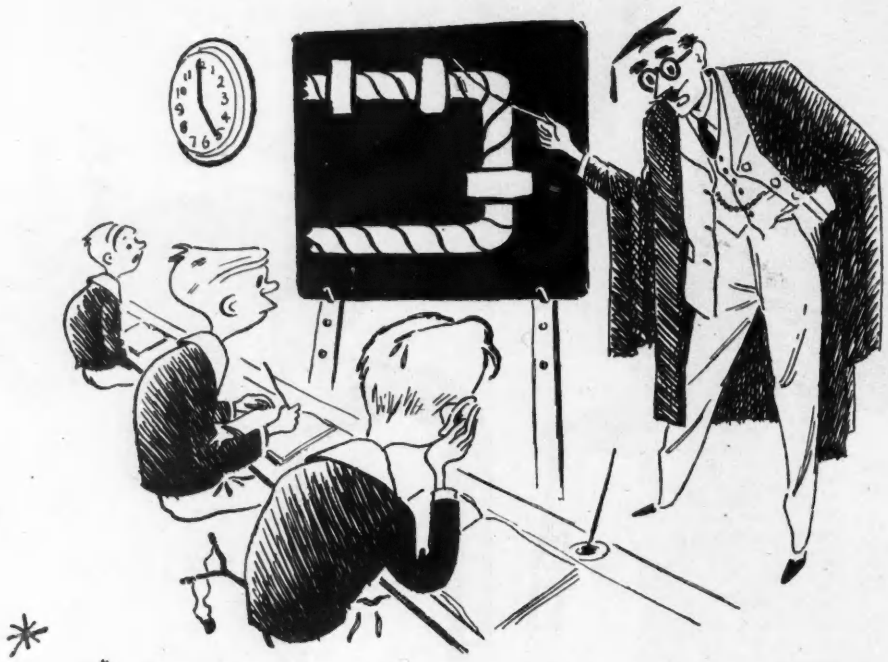
Our photographs shows a Simon-Carves plate type electro-detarrer and a high velocity multi-pass vertical tube condenser under erection at the Salthouse Gas Works, Barrow-in-Furness. This installation will have a capacity of 3 million cu. ft. per day.

SIMON-CARVES LIMITED
CHEADLE HEATH · STOCKPORT
Telephone: Gatley 3600 Telegrams: "Simcar" Manchester.

GAS WORKS
BY-PRODUCTS PLANT

High-efficiency Vertical and Horizontal Tube Condensers
Electro de-tarring Plant
Static Ammonia Washers
Tar and Liquor Separating and Decanting Systems
Automatic Crude Benzole and Rectification Plant
Concentrated Ammonia Liquor Plant
Heat Exchange Equipment for Oil and Liquor Coolers
Gas Heaters and Storage Tanks

SIMON ENGINEERING GROUP



HEAT CAN BE KEPT IN TOO!

Heat's natural instinct is to go out to play from all surfaces which store or convey it. Few people realise that if a 1" steam pipe with a surface temperature of 200° C is unlagged for 20 ft., the heat lost by radiation and convection may waste nearly half a hundredweight of coal in the course of a working week.

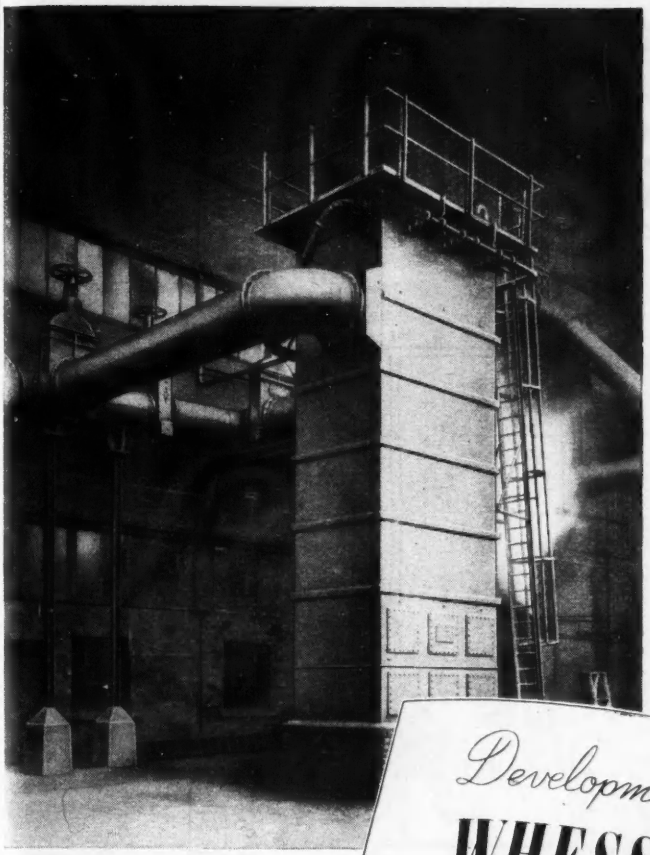
Most likely your heated surfaces *are* lagged. But are they all lagged *efficiently?* Are regular checks carried out to ensure that insulating material is in good condition everywhere—including that dark corner where the pipes can't be reached without a ladder? Is the thickness of the material sufficient for the temperature of the surface it covers? Are you sure that flanges and valve bodies have not been left naked to make maintenance easy? The heat loss from a bare flange may be as much as that from a foot or more of bare pipe.

Proper lagging of boilers, cylinders, steam pipes and other heated surfaces pays the highest dividends in fuel efficiency for very little capital expenditure. Fuel Efficiency Bulletin No. 2 published by the Ministry of Fuel and Power is a little mine of information concerning this. The Ministry's Regional Office will gladly send you a copy if yours has gone astray.

YOUR REGIONAL FUEL OFFICE

REGION	ADDRESS	TELEPHONE
Northern	Government Buildings, Ponteland Road, Newcastle-on-Tyne, 5	Newcastle 28131
North-Eastern	Century House, South Parade, Leeds, 1	Leeds 30611
North-Midland	Castle Gate House, Castle Gate, Nottingham	Nottingham 46216
Eastern	Shaftesbury Road, Brooklands Avenue, Cambridge	Cambridge 56268
London	Mill House, 87/89, Shaftesbury Avenue, W.1	Gerrard 9700
South-Eastern	95, High Street, Rochester	Chatham 3487
Southern	Whiteknights, Earley, Reading	Reading 61491
Wales	27, Newport Road, Cardiff	Cardiff 9234
South-Western	12/14, Apsley Road, Clifton, Bristol, 8	Bristol 38223
Midland	Temporary Office Buildings, Hagley Road West, Birmingham, 17	Bearwood 3071
North-Western	Burton Road, West Didsbury, Manchester, 20	Didsbury 5180-4
Scotland	145, St. Vincent Street, Glasgow, C.2	Glasgow City 7636
Scotland	51, Cockburn Street, Edinburgh, 1	Edinburgh 34881
Scotland	1, Overgate, Dundee	Dundee 2179

ISSUED BY THE MINISTRY OF FUEL AND POWER



Condenser installed for the Preston Gas Company, capacity 6.0 Million cu. ft. per day vertical retort gas.

Development in **CONDENSER DESIGN**

WHESSOE MULTI-PASS VERTICAL TUBE CONDENSER

Whessoe have played an important part in the development of high efficiency, rectangular, multi-pass, vertical water-tube gas condensers, now widely employed on account of the ease of maintenance together with minimum surface requirement and water consumption. A feature of the Whessoe design is the means employed for flushing the gas side of the water tubes for the removal of deposits.

WHESSOE DARLINGTON

WHESSOE LIMITED DARLINGTON

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LONDON, 25 VICTORIA STREET, S.W.1 TEL. ABBEY 3881

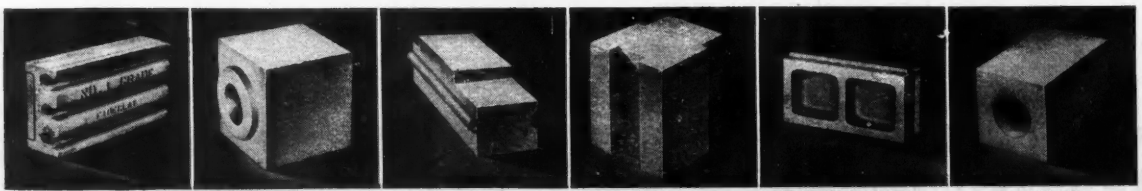
Life is full of little uncertainties —

— but there's never any doubt about GIBBONS!

GIBBONS

First for Refractories since 1843

The evolution of a modern Gibbons Refractory is the story of 105 years of hard research work. For Gibbons believe there must be endless experiment, constant planning and testing, to make certain of a perfect refractory. As industry has increased its demands, so Gibbons have increased their output and the efficiency of their refractories. By experience, they satisfy the needs of industry. By research they hurry the pace of progress.



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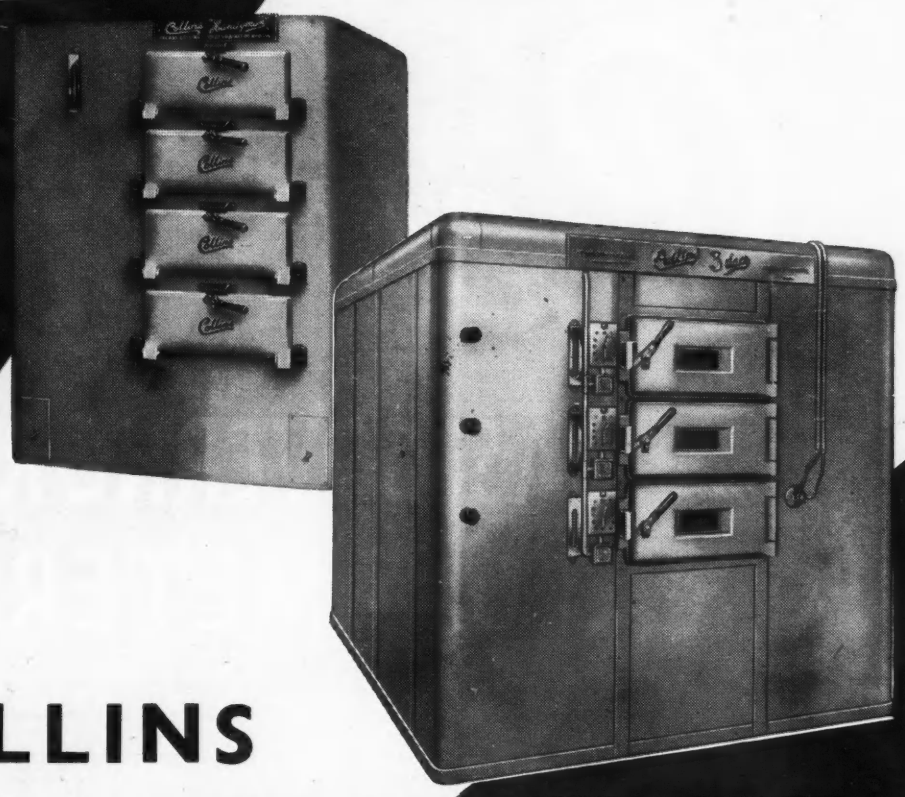
Gibbons (Dudley) Ltd., Dibdale Works, Dudley, Worcs.

THE BAKERS' LOAD



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GAS-FIRED BAKING OVENS

The wide range of Collins Multi-dex Gas-fired Ovens cover every requirement—Bread Baking, Confectionery, Pastry, Rolls, Pies, Roasting, etc. Increased baking production on economical costs is assured.

- **All decks are worked from floor level.**
- **The special furnace ensures a solid mellow heat.**
- **The low crowned chambers produce perfect baking at a lower temperature than in the average oven.**
- **Clean and simple to operate.**

Let our Technical and Planning Dept. advise without obligation.

THOMAS COLLINS & Co. Ltd.

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Peebles

GAS GOVERNORS
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Honest Traffick

'Merchandize promotes Humanity as it has open'd and yet keeps up an intercourse between Nations far remote from one another in Situation, Customs and Religion; promoting Arts, Industry, Peace and Plenty; by mutual Benefits diffusing mutual Love from Pole to Pole; and teaching the Advantages of Honest Traffick." *

Anciently on the trade-routes between India and the West the silks of China and other Eastern riches were carried to Byzantium and Imperial Rome. By the "Incense Route" perfumes and spices from Africa and India reached many and varied destinations. So the beginnings of healthy intercourse between nations. To the trade-routes of the olden days, "seaways active still though perhaps less picturesque," time and enterprise (British enterprise in particular) have made many additions and will continue to do so. Asbestos, ancient as the trade-routes themselves, figured but insignificantly in early Phoenician deals. Today the "wonder-mineral" enters into well-nigh every walk of life and is speeded across land and sea. In factories, mines, mills and homes the world over, the part played by Asbestos is persistent and perpetual, versatile and vital. As *Specialists in Applied Asbestos* we render services to engineers in all matters of plant-maintenance. "Merchandize promotes Humanity," raises the standard of living. We at Slough are redoubling our efforts in Britain's supreme effort to export. It is an exhilarating task

BELL'S ASBESTOS AND ENGINEERING LIMITED

SLOUGH ('phone 20211) BUCKS

25 Branches (including 11 in the Dominions)

* *From Bickham's "Universal Penman," an early eighteenth century publication. Facsimiles of certain of the pages, beautifully illustrated, are comprised in one of the Hatrow Replicas.*

A NEW COOKER WITH A NEW POINT OF VIEW

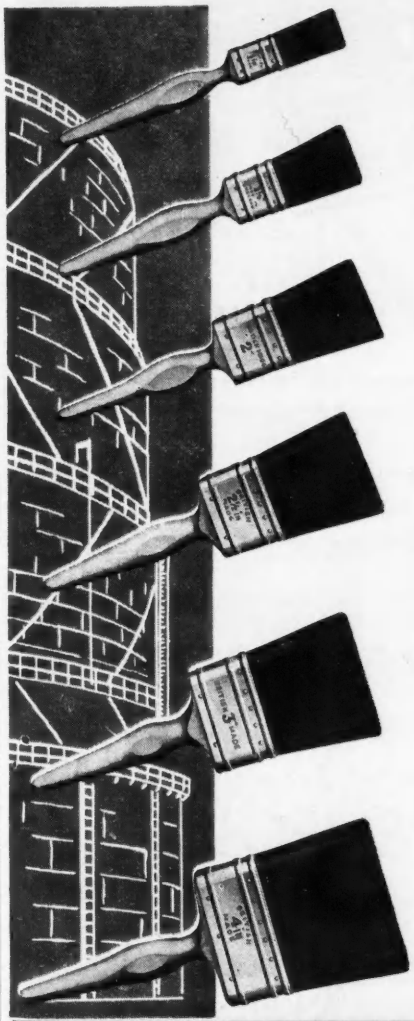
The demand for a cooker with a large oven has long been known to the gas industry and the "31" gas cooker has been specifically designed to meet that demand. Embodying an 18" oven, built on neat lines, the "31" has many practical features which bear evidence of extensive research and planning—planning which has been governed by the three most important qualities in gas cooker production—efficient working, ease of cleaning and good design. Available in two finishes—Cream and Black enamel or Grey Mottled enamel, with a choice of Folding Cover Top and Shelf as illustrated or with fixed Splashplate and single plate rack.

Proprietors: Allied Ironfounders Ltd.

GENERAL

GENERAL GAS APPLIANCES LTD. AUDENSHAW MANCHESTER

Prepare NOW for Spring Painting



Illustrated are some examples of our wide range of **Paint Brushes,** stocked in various sizes, in two grades, medium quality and best quality. These brushes are remarkably good value and their thickness of stock with generous amount of bristle ensures long wear in the painting of constructional steel work, Gasholders etc. We can offer good delivery as well as competitive prices for small or large quantities. Anticipate your requirements for the coming seasonal painting and maintenance work, and send now for particulars and quotations.

NICHOLSON & WEST LTD

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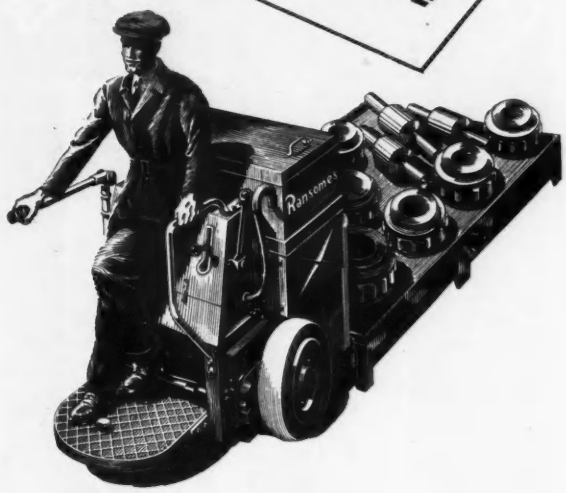
Telephone:- HALIFAX 3224
Telegrams:- "TOOLS, HALIFAX"

Performance
SECOND TO NONE



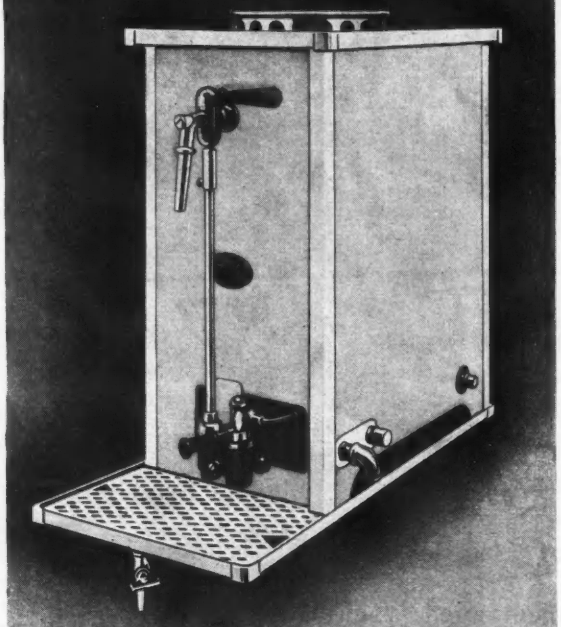
'RANSOMES' . . . . The British Pioneers of Electric Industrial Trucks . . . . have maintained their lead because of sheer strength of construction, high quality materials and a performance second to none. Low running costs and long life, wherein real economy lies, are features which lead to the inevitable choice of 'RANSOMES' as a wise investment.

Ransomes THE FIRST NAME IN ELECTRIC TRUCKS

1 to 4 Tonners, Tippers, Tractors, Crane Trucks

RANSOMES, SIMS & JEFFERIES, LTD.
ORWELL WORKS IPSWICH

THE MOST ADVANCED GAS HEATED WATER BOILER



You will be glad you installed the "UFIX" Boiler with the following starred features

- ✱ Boiling Water only supplied
- ✱ Self-feeding and fully Automatic
- ✱ Fitted with the original Interchangeable Interior
- ✱ Manufactured of 18 gauge copper with Brazed Joints
- ✱ Finished in Vitreous Enamel Chromium Plated Fittings

Fullest information on request

U FIX

THE UFIX BOILER Co LTD

144 KING STREET, HAMMERSMITH, W.6.

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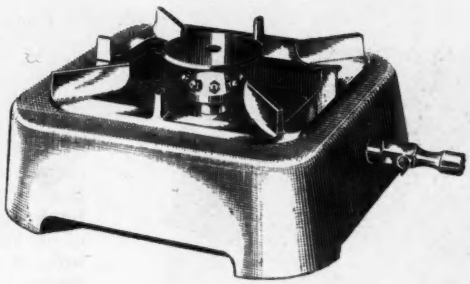
GAS HEATING APPLIANCES

of distinguished design and performance



The "C.P."
BOILING BURNER

A well designed unit for hotels, restaurants, cafes, bedrooms, and supplementary kitchen use.

The "C.P." Boiling Burner measures 7¾" square at base and stands 3¼" high. Available in Vitreous enamelled Cream, Green or Mottled Grey.

A PRODUCT THAT IS
Both IN SUPPLY *and* IN DEMAND

COWPER PENFOLD

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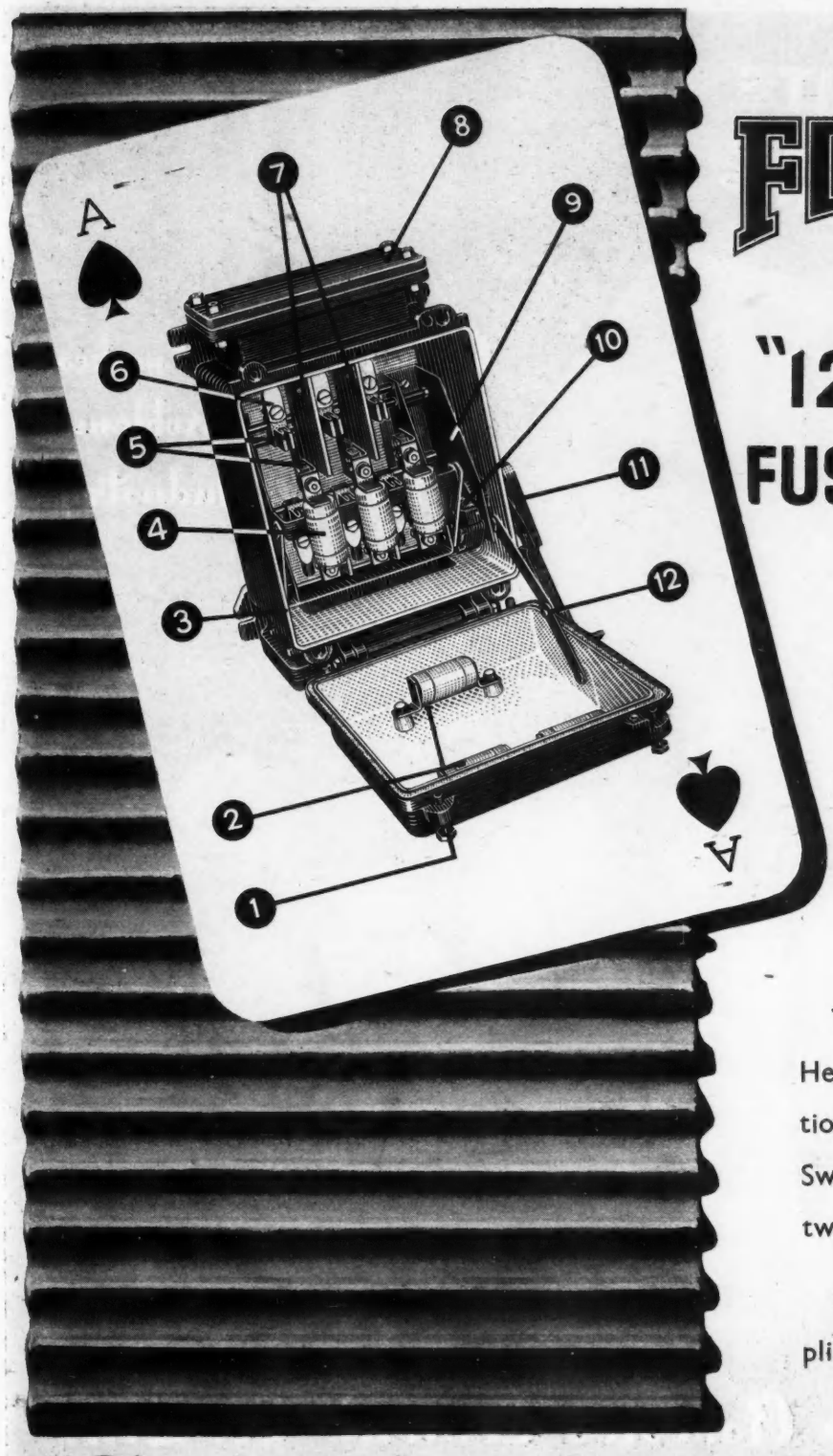

The

FOSTER H.I. "12 POINT" FUSE SWITCH

The Trump Card of our Heavy Industrial Distribution Switchgear is the Fuse Switch itself with its twelve outstanding points.

Full details readily supplied.

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Associated Companies: **Lancashire Dynamo & Crypto Ltd., Manchester** • **Crypton Equipment Ltd., Bridgwater**
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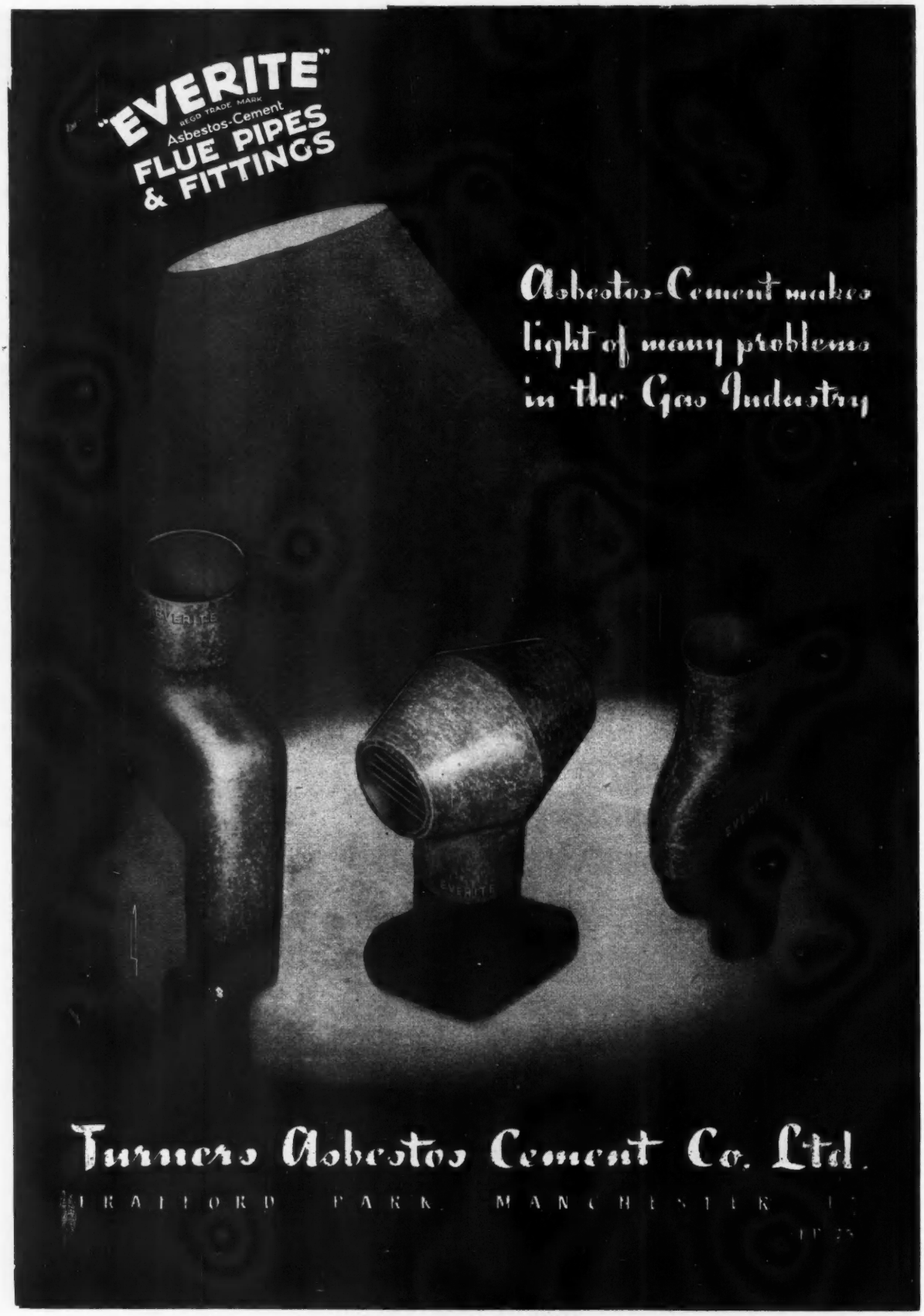
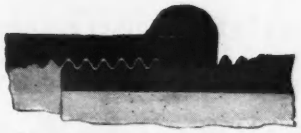
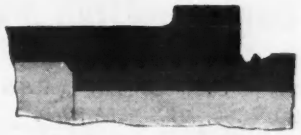

"EVERITE"
REGD TRADE MARK
Asbestos-Cement
FLUE PIPES
& FITTINGS
Asbestos-Cement makes
light of many problems
in the Gas Industry
Turners Asbestos Cement Co. Ltd.
TRAFFORD PARK MANCHESTER

There is a difference

And there is also a difference between Crane pipe fittings and other good quality fittings, for Crane fittings have TAPER-TO-TAPER THREADS, which, by making solid metal-to-metal contact throughout their entire length, ensure stronger joints free from corrosion.



Many parallel threads doing no work although wrench tight. This defect starts corrosion.

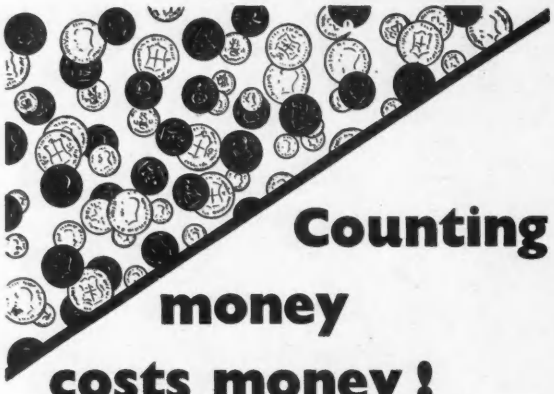


See how Crane taper threads make perfect contact. Note the extra metal where threads are cut.

CRANE

VALVES, FITTINGS AND HEATING EQUIPMENT

CRANE LTD., 45-51, LEMAN STREET, LONDON, E.1. Branches : Brentford - Birmingham - Bristol - Glasgow - Manchester



Counting money costs money!

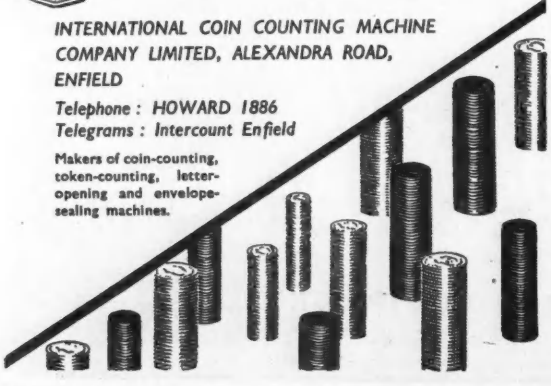
Any business that has to handle and count large quantities of mixed coinage and does it by hand is wasting more man-hours than business can afford today. Precious man-hours too, because the job must be done by responsible (meaning well-paid) workers. And even so, it's human to err!... Instal an I.C.C. coin-counting machine, switch on, and do the job at high speed with absolute accuracy. A typical machine sorts, counts and records £100 of mixed coinage in five minutes and the youngest office-girl can work it. We'll be glad to arrange a demonstration in your own office.

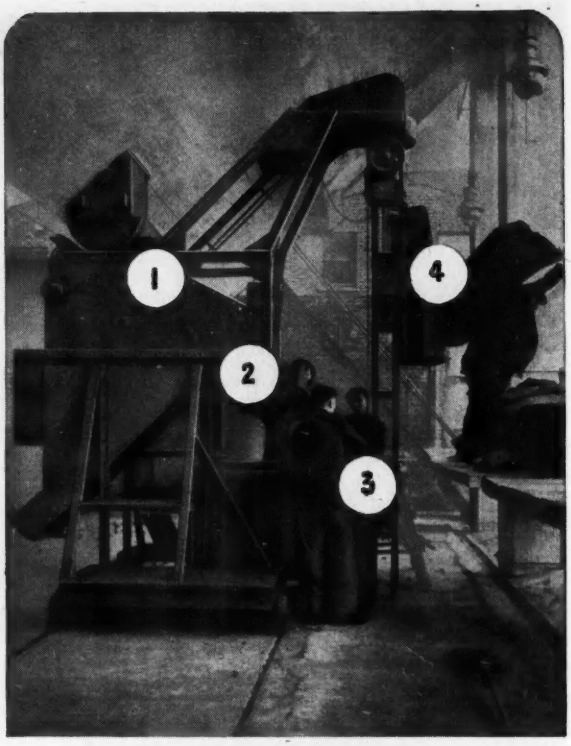
ICC **COIN-COUNTING MACHINES**

INTERNATIONAL COIN COUNTING MACHINE COMPANY LIMITED, ALEXANDRA ROAD, ENFIELD

Telephone: HOWARD 1886
Telegrams: Intercount Enfield

Makers of coin-counting, token-counting, letter-opening and envelope-sealing machines.





(1) IT DEBREEZES 50 TONS OF COKE PER HOUR . . .

(2) WEIGHS IT
(3) BAGS IT . . . AND
(4) THEN HOISTS IT!

Nine out of ten London and Home Counties Gas Works use the A.C.E. 2 ft. screening unit which handles up to 50 tons of clean coke per hour continuously. Adapted for intermittent running, for bagging purposes, the output is 20/25 tons per hour, screened, weighed and bagged. And the one-up, one-down sack hoist, which is incorporated, speeds up loading. Write for the "Ace" debreezing booklet, which describes the full "Ace" range.

ACE
DE-BREEZING SCREENS

A.C.E. Machinery Ltd., are specialists in concrete elevating plants, platform hoists, runway hoists, warehouse and special purpose hoists, mobile hoists, mobile stackers and mobile lightweight cranes, power winches, capstans.

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The photograph shows a 14,000 g.p.h. pressure sand filtration plant installed by us at the Exeter Gaslight & Coke Company's Works for treatment of Canal water, and forming part of a comprehensive scheme covering all water requirements. Condenser cooling water, after filtration, is dosed for prevention of corrosion, and 4,000 g.p.h. required for boiler feed is softened by the base exchange process. Continuous blow down equipment controls boiler water concentration and provides maximum heat recovery, and an electrical de-oiling plant, of 1,500 g.p.h. capacity, purifies condensate returns for re-use in the boilers.

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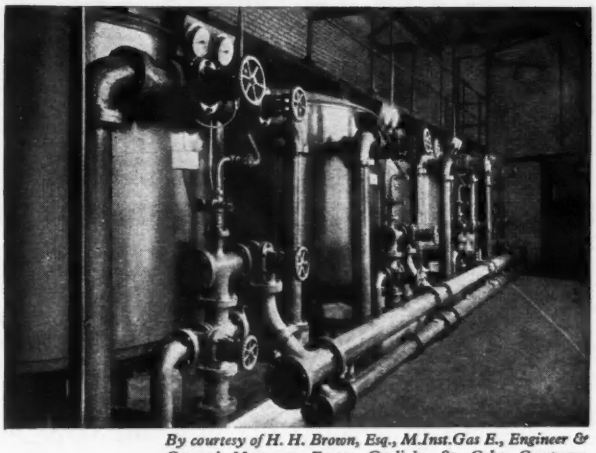

By courtesy of H. H. Brown, Esq., M.Inst.Gas E., Engineer & General Manager, Exeter Gaslight & Coke Company.

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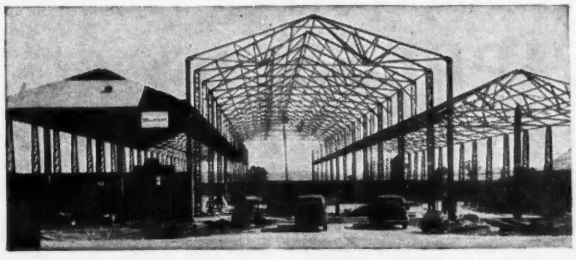

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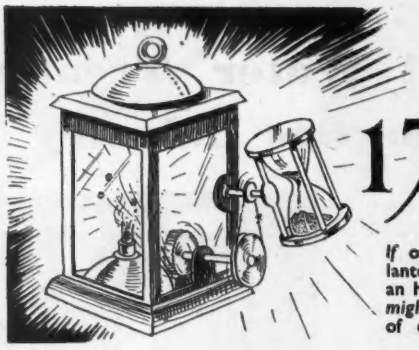

1769

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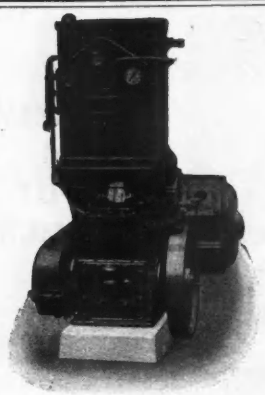

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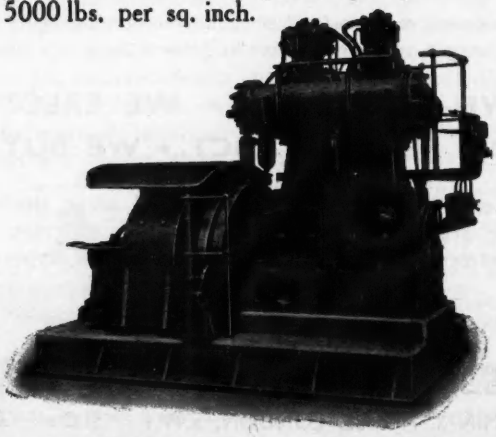

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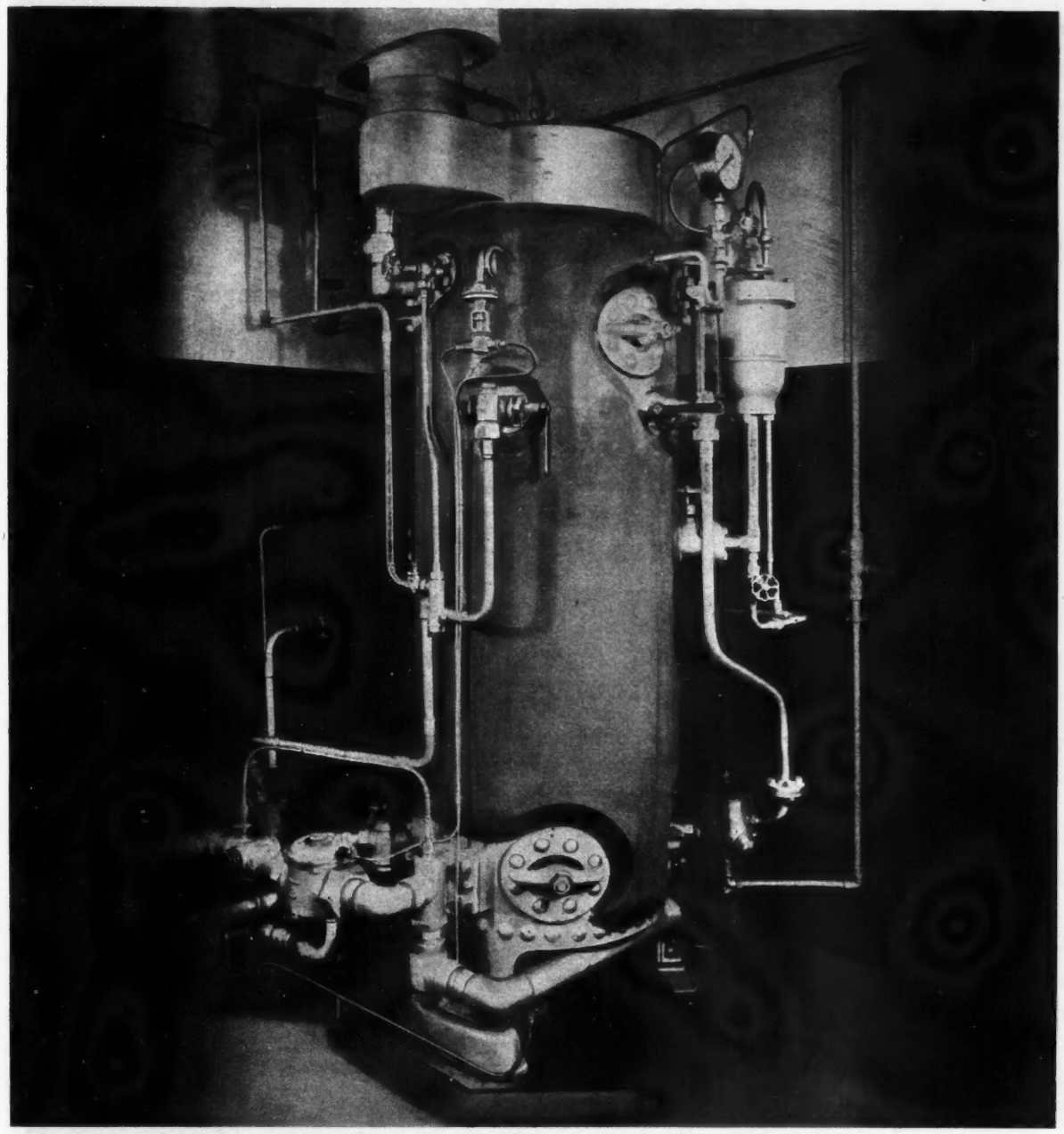

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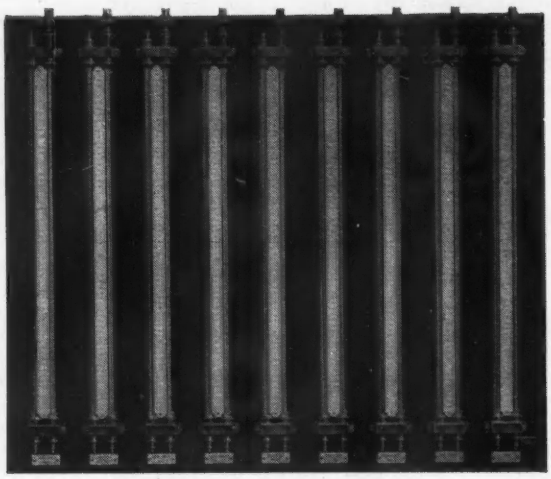

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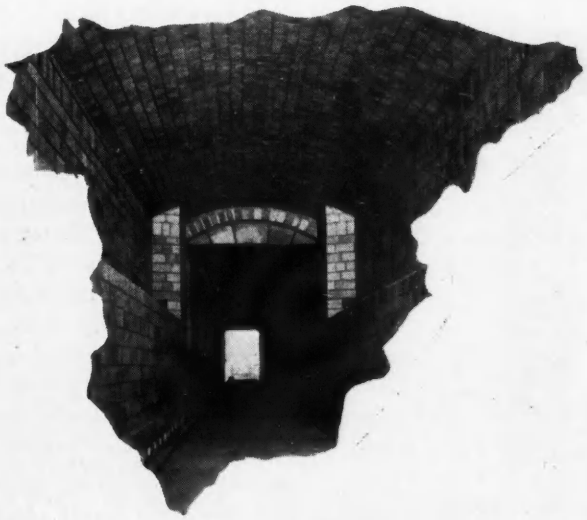

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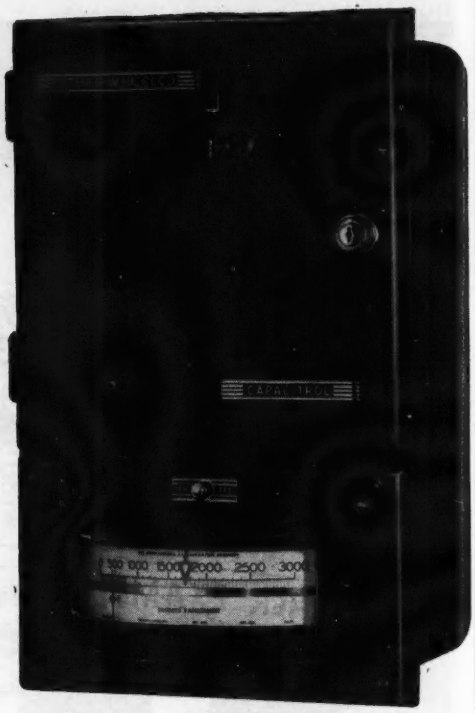

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INDEX TO "JOURNAL" ADVERTISERS

	PAGE
A	
A.C.E. Machinery, Ltd.	554
Acme Wringers, Ltd.	
Abbott, Birks & Co., Ltd.	
Accurate Recording Instrument Co.	
Aerospray Manufacturing Co., Ltd.	
Albright & Wilson, Ltd.	
Alder & Mackay, Ltd.	S3
Ascot Gas Water Heaters, Ltd.	Cover I
Ashmore, Benson, Pease & Co. Ltd.	
Ashworth & Parker, Ltd.	
Aspinall's (Paints), Ltd.	S5
Automatic Telephone & Electric Co., Ltd.	
Automotive Products, Ltd.	
Averill, C. R., Ltd.	
B	
Bagnall, W. G., Ltd.	
Bale & Church, Ltd.	S4
Balfour, Henry, & Co., Ltd	
Bell's Asbestos & Engineering, Ltd.	547
Bellman Hangars, Ltd.	555, S4
Benham & Sons, Ltd.	
Bitulac, Ltd.	
Boydell, E., & Co., Ltd.	
Braddock, J. & J.	
Bratt Colbran, Ltd.	
Bray, George, & Co., Ltd.	
Bristol's Instrument Co., Ltd.	
British Fittings Co. (Hendon), Ltd.	586
British Flint & Cerium Manufacturers, Ltd.	
British, Foreign & Colonial Automatic Light Controlling Co., Ltd.	556
British Furnaces, Ltd.	
British Gas Council	
British Gas Purifying Materials Co.	
British Monomarks, Ltd.	
British Thomson Houston Co., Ltd.	
British Vacuum Cleaner & Engineering Co., Ltd.	
Broadbent, J. C., & Co., Ltd.	
Broadbent, Thomas, & Sons, Ltd.	
Brockhouse Heater Co., Ltd.	
Broom & Wade, Ltd.	
Brotherhood, Peter, Ltd.	
Bugden, Thos., & Co.	
C	
Cannon Iron Foundries, Ltd.	
Cannon Iron Foundries, Ltd. (Canalloy Tubing and Fittings)	
Carrington, Tom, & Co., Ltd.	
Cellactite & British Uralite, Ltd.	
Chaseside Engineering Co., Ltd.	
Chemical Engineering & Wilton's Patent Furnace Co., Ltd.	
Cinema-Television, Ltd.	
"Citizen"	
Clapham Bros., Ltd.	
Clayton, Son & Co., Ltd.	
Clough (Croydon), Ltd.	
Cochran & Co. (Annan), Ltd.	557
Cochrane & Co. (Shettleston) Ltd.	
Collins, Thomas, & Co., Ltd.	545
Concrete Proofing Co., Ltd.	S1
Connell, James N.	
Consolidated Pneumatic Tool Co., Ltd.	
Corner, G., & Co., Ltd.	
Cowper Penfold & Co., Ltd.	550
Cox & Danks Ltd.	
Crane, Ltd.	553
Crone & Taylor, Ltd.	
Crossley, Bros.	
Crow, Fred B.	
Curtis, Algernon Lewin	S2
Cutler, Samuel, & Sons, Ltd.	
Cuxson, Gerrard & Co., Ltd.	
D	
Danks, of Netherton, Ltd.	
De la Rue Gas Development Ltd.	
Dempster, R. & J., Ltd.	
Dempster, Robert, & Sons, Ltd.	S5
Derbyshire Silica Firebrick Co., Ltd.	
Devonarc Welding Works	S5
Dewrance & Co., Ltd.	
Diaphragm & General Leather Co., Ltd.	
Dick, R. & J., Ltd.	
Donkin (The Bryan) Co., Ltd.	Cover II
Douglas, William, & Sons, Ltd.	S2
Drag Scraper & Engineering Co., Ltd.	539
Drakes, Ltd.	
Drew, H. B., Ltd.	
Dunlop Rubber Co., Ltd. (General Rubber Goods Division)	
Durasteel Roofs	
E	
Edgar, William, & Sons, Ltd.	
Electroflo Meters Co., Ltd.	
Electrolux, Ltd.	
Elliott Bros. (London), Ltd.	
Ether, Ltd.	560
Ewart Chainbelt Co., Ltd.	
Ewart & Sons, Ltd	
F	
Falk, Stadelmann Co., Ltd.	
Filtrators, Ltd.	555
Firth, Blakeley, Sons & Co., Ltd.	
Flavel, S., & Co., Ltd.	
Fluxite, Ltd.	
Foster Transformers & Switchgear Ltd.	551
Four Oaks Spraying Machine Co., Ltd.	
Fraser & Chalmers, Engineering Works.	
Friedman, Athill, Ltd.	
G	
Gas Meter Co., Ltd.	
Gas Purification & Chemical Co., Ltd.	S5
General Gas Appliances, Ltd.	548
Gibbons Bros., Ltd.	559
Gibbons (Dudley), Ltd.	544
Gills Pressure Castings	
Glover, George, & Co., Ltd.	537
Glover, Thomas, & Co., Ltd.	564
Goodall Clayton & Co., Ltd.	
Goodyear Mechanical Goods	
Grant & West, Ltd.	
Grant, David, & Co., Ltd.	558
Green & Boulding, Ltd.	S5
Greening, N., & Sons, Ltd.	
H	
Hamilton, A. H., & Co., Ltd	586
Hannan & Buchanan	
Hardman & Holden, Ltd.	
Harris & Pearson, Ltd.	
Harrisons (London), Ltd.	S4
Harvey, G. A., & Co. (London), Ltd.	539
Heat & Air Systems, Ltd.	
Helliwells, Ltd.	
Hewitt Construction Co., Ltd.	
Hilmor, Ltd.	
Holden & Brooke, Ltd.	
Holmes, W. C., & Co., Ltd.	S6
Horsley Bridge & Thomas Piggott, Ltd.	
Horstmann Gear Co., Ltd.	
Humphreys & Glasgow, Ltd.	562
Hyde, Silas, Ltd.	
I	
I.C.I. Metals, Ltd.	540
Incandescent Heat & Co., Ltd.	
International Coin Counting Machine Co., Ltd.	554
International Combustion	
J	
Jeavons, E. E., & Co., Ltd.	S2
Jeavons Engineering Co.	
Jenkins, W. J., & Co., Ltd.	
Jobling, James A., & Co., Ltd.	
K	
Keay, E. C. & J., Ltd.	
Keith Blackman, Ltd.	S8
Key Engineering Co., Ltd.	
King, George W., Ltd.	
King, Walter, Ltd.	
Kings Patent Agency, Ltd.	
Kirkham Hulett & Chandler, Ltd.	
Kleenoff Co.	
Klinger, Richard, Ltd.	560
L	
Laidlaw, R., & Son, Ltd.	
Lamont, James H., & Co., Ltd.	
Lancashire Dynamo & Crypto, Ltd.	
Le Bas Tube Co., Ltd.	
Lomax & Smith, Ltd.	
London Electric Firm, Ltd.	S3
London Nameplate Manufacturing Co., Ltd.	
London Welding Co., Ltd.	
M	
MacPherson, Donald, & Co., Ltd.	
Main, R. & A., Ltd.	581
Main Water Heaters, Ltd.	
Mavitta Drafting Machines, Ltd.	S3
Meltham Silica Firebrick Co., Ltd.	
Metronic Instrument Co., Ltd.	
Metropolitan Leather Co., Ltd.	
Mewburn, Ellis, & Co.	S5
Midland Bank, Ltd.	
Milnes Meters, Ltd.	558
Ministry of Fuel	542
Ministry of Labour	
Mitchell, H., & Co.	
Morris Commercial Cars, Ltd.	
Mors Moler	
N	
National Enamels, Ltd.	
National Gas Water Heater Co., Ltd.	537
National Savings Committee	
New Bowson Coal Co., Ltd.	
Newton Chambers & Co., Ltd.	578
Niagara Screens (G.B.), Ltd.	
Nicholson & West, Ltd.	549
North British Rubber Co., Ltd.	
Northern Metal Trading Co. Ltd.	
Northern Pump & Equipment Co., Ltd.	S3
O	
Oxley Engineering Co., Ltd.	Cover II
P	
Parkinson & Cowan (Gas Meters), Ltd.	564
Parkinson Stove Co., Ltd.	
Pass, E., & Co., Ltd.	
Peckett & Sons, Ltd.	S2
Peebles & Co., Ltd.	546
Perfecta Gas Appliances, Ltd	
Power Gas Corporation Ltd.	
Powers-Samas Accounting Machines, Ltd.	
Press, William, & Son, Ltd.	
Pulsometer Engineering Co., Ltd.	Cover IV
R	
Radiant Heating, Ltd.	
Radiation, Ltd.	582, 583
Ransomes, Sims & Jefferies	549
Rawlplug Co., Ltd.	
Reavell & Co., Ltd.	556
Renfrew Foundries, Ltd.	
Roneo, Ltd.	
Royal Institute of Chemistry	
Rubber Asbestos Fibre Ltd.	
Russell, R., & Sons, Ltd.	
S	
Salter, T. E., Ltd.	563
Sawer & Purves	584
Scottish Non-Ferrous Tube Industries, Ltd.	
Sentinel (Shrewsbury) Ltd.	
Siebe Gorman & Co., Ltd.	
Sigma Instrument Co., Ltd.	
Sisson, W., & Co., Ltd	
Simon-Carves, Ltd.	541
Slingsby, W., & Co., Ltd.	S3
Smith Meters Ltd.	
Spencer Bonecourt, Ltd.	
Spencer (Melksham), Ltd.	
Sperryn & Co., Ltd.	
Stanton Ironworks Co. Ltd.	S6
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Stewarts & Lloyds, Ltd.	
Stovers, Ltd.	
Strachan & Henshaw, Ltd.	S1
Stringer Bros.	S2
Sugg, William, Ltd.	538
Sutcliffe Speakman & Co., Ltd.	
Sutherland, A. G., Ltd.	
Sykes & Company	
T	
Taylor Woodrow Construction, Ltd.	
Telegraph Construction & Maintenance Co., Ltd.	
Thomas & Bishop, Ltd.	
Thomas, Richard, & Baldwins, Ltd.	
Thompson, John, Conveyer Co., Ltd.	
Tully, Sons, & Co., Ltd.	
Turbine Furnace Co., Ltd.	555
Turners Asbestos Cement Co., Ltd.	552
U	
Ufix Boiler Co., Ltd.	550
Underpressure Engineering Co., Ltd.	
V	
Vale, Thomas, & Sons, Ltd.	
Visco Engineering Co., Ltd.	
Vulcan Stove Co., Ltd.	
W	
Wakelin, F. H., Ltd.	
Wailes Dove Bitumastic, Ltd.	
Walker, C. & W., Ltd.	584
Walker, Crossweller & Co., Ltd.	
Walker, James, & Co., Ltd.	
Waller, George, & Son, Ltd.	
Wellington Tube Works, Ltd.	
Westbury & Seend Ore & Oxide Co. Ltd.	
West's Gas Improvement Co., Ltd.	Cover III
West's Piling & Construction Co., Ltd.	
Westwood & Wrights, Ltd.	
Whessoe, Ltd.	543
Whitehouse, Wm., & Co., Ltd,	
Whittaker Ellis, Ltd.	
Widnes Foundry & Engineering Co., Ltd.	
Wild, M. B., & Co., Ltd.	
Wilkes, A. H., & Co., Ltd.	
Willey & Co., Ltd.	586
Williams, John E., Ltd.	
Williamson Cliff, Ltd.	
Wilson, George, Gas Meters, Ltd.	
Winn & Coales, Ltd.	
Winn, Charles, Ltd.	
Witkin Reynolds & Co., Ltd.	
Woodall-Duckham Vertical Retort & Oven Construction Co. (1920), Ltd.	Facing 576
Wright, Alexander, & Co., Ltd.	

Agencies	
Appointments Vacant	S5, S6
Books in Stock	
Company Notices	
Contracts Open	S5
Educational	
Miscellaneous	S5
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CONTENTS

EDITORIAL

	Page
Parliament and Nationalized Industries	565
Right Relationships in Industry	566
Development in Rural Areas	566
Gas for Steam Raising	566
Scrap Shortage	566
"Trade and Technical Press"	567
Personal	567
Obituary	567
Diary	567
Nationalization and Co-Partnership	567
The Gas Bill in Committee Stage	568
Opposition Re-affirmed	570
Co-Partners' Gifts to Directors	570
Gas Staffs and the Bill	570
Coal Composition	571
"Then the Coal Came"	571
At the Ideal Home Exhibition	571
Royal Visit to the B.G.C. Stand	571
A New Tea Boiler	572
Midland Juniors Visit Dagenham	572
Material Handling on a Provincial Gas-works. By J. D. C. Woodall, B.A. (Camb.), Engineer and Manager, Maidstone Gas Company	573
Cambridge University and Town Gas Light Company	580
The Chairman Said—	580
Gas Undertakings' Results	585
Gas Products Prices	585
Gas Stocks and Shares	585

Advertisement Index Page 561 **Publishers' Notice Page S4**

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FOR HOT AIR WHERE YOU DO WANT IT . . .

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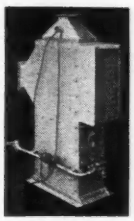

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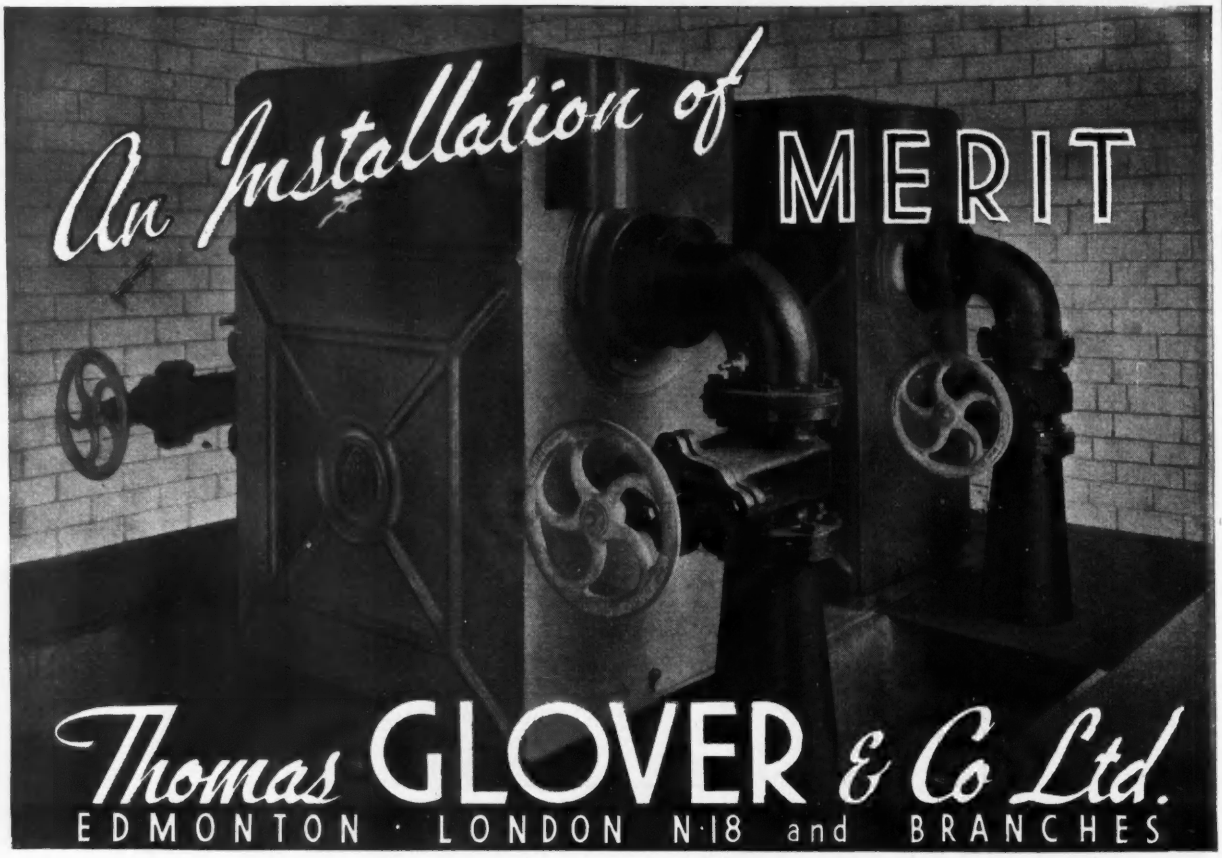

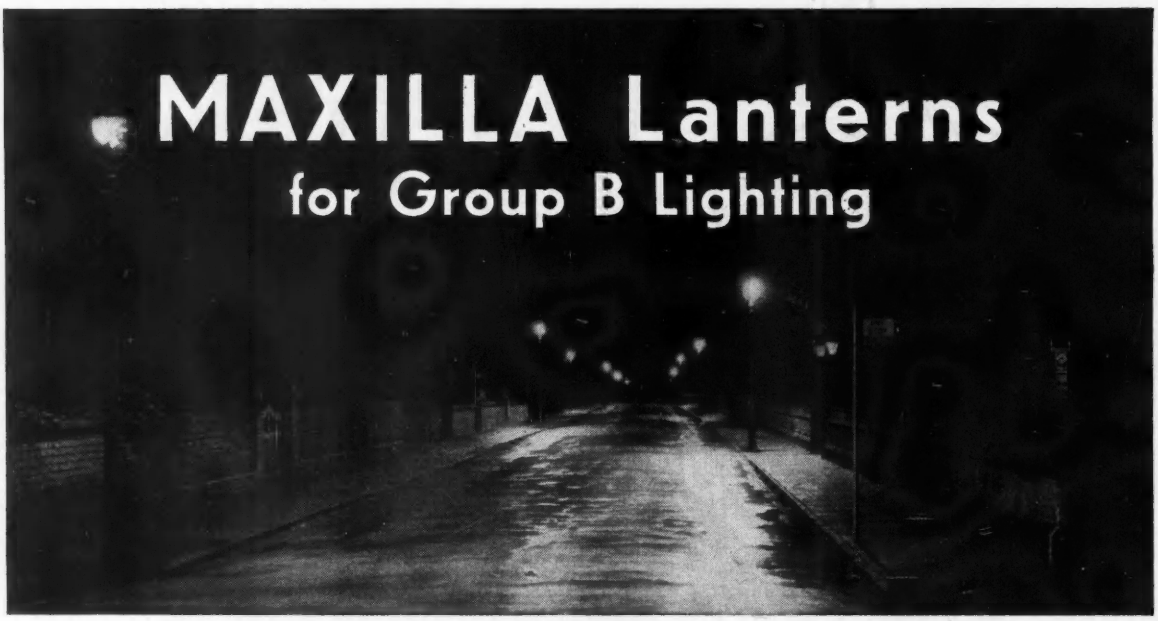

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GAS JOURNAL

Vol. 253 March 17, 1948 No. 4424

PARLIAMENT AND NATIONALIZED INDUSTRIES

ON later pages we continue our story of the Gas Bill in Committee Stage. In the meantime there has been a lengthy debate in the House of Commons on the relationship between Parliament and nationalized industries. To our mind the debate did not carry us very far, but the subject is obviously of importance as well as of current interest to the gas industry. The problem raised was the principle upon which questions are to be asked of and replies given by Ministers. How, enquired Capt. Crookshank (C., Gainsborough), are we, as representatives of the owners of the nationalized industries and of the users and consumers, to review the general activities of the organizations running these industries, and on what occasions? Ought there to be a permanent standing committee to look through either the accounts and the business or the general administration of business? Rightly or wrongly, in setting up these State monopolies Parliament had decided against their being on the Civil Service or Post Office basis, and the Boards had been given the maximum freedom to run their affairs on business lines. His views were that the Minister must answer in regard to his statutory duties; that members of the House had the undoubted right to put down questions on grievances and when seeking for information; and that Ministers had the right to decline to give answers provided they continued to have the support of the House in the position they took up. Colonel Ropner (C., Barkston Ash), pointing to the fact that nationalized industries have been awarded a degree of autonomy, argued that the Ministers most closely concerned have been relieved of a measure of responsibility. The problem was therefore a new one; and in his opinion, sooner or later, Parliament would insist that Ministers should answer the same range of questions in the case of nationalized industries as they would if those industries were directly and entirely controlled by Government Departments.

"I want these corporations to be responsible ultimately to the Minister, and for the Minister to be responsible to this House, but I want the corporations to have a considerable amount of independence in managing their affairs. I do not want them to be run from Whitehall." This contention was put forward by Mr. Roberts (L., Cumberland N.), and it brought him to the difficulty that if they could ask questions, and suggest to the Minister that he ought to give directions on every matter of administration, the Minister would, in fact, be running these new corporations, and the Boards would lose an important part of their independence and sense of responsibility. The old tradition of the Civil Service was that the Minister was responsible for every action that a civil servant took. He did not want the Minister to be responsible for every action that every employee of all the public corporations took. "I want," he said, "to safeguard our right to ask questions, but I also want to safeguard the Minister's lack of responsibility for every action which every employee takes, and I want the Minister to be able to say freely 'This is a matter which I have left to the Board; I can give you information, but I am not taking responsibility.'"

The question then arose on the practice of Members of Parliament communicating direct with Boards or Commissions. It was suggested by Mr. Driberg (Lab., Maldon) that encouragement of this practice would constitute undesirable day-to-day interference by Members of Parliament in the running of nationalized industries. It would be irritating and disheartening to those in control of the Boards. Mr. Molson (C., High Peak) expressed the view that it would be a very great mistake if the Minister of Fuel and Power accepted the position that he should be held accountable for every small day-to-day decision taken in the nationalized industries. If every administrator had to consider, before making up his mind about what to do in day-to-day administration, how his particular actions might look if a question were put down in the House of Commons about them, this would have a most deadening effect on all initiative and enterprise in these nationalized industries. There was another point. If the Ministers were liable to be questioned about these matters in the House and held responsible for them, they would require to exercise control, and the effect of that would be a great centralization of the nationalized industries He thought that the responsibility for refusing to answer questions should be regarded as a Parliamentary and administrative responsibility which should rest fairly and squarely on the Ministers themselves. In this respect Sir John Anderson (Nat., Scottish Universities) maintained that the Ministers should be conceded a very wide discrimination, especially in the early days, and that if a Minister could satisfy the House that he was justified in declining to answer a question of any particular type, he should be allowed to go on refusing to answer such questions.

The Lord President of the Council (Mr. Herbert Morrison), winding up the debate, said the Conservative Party must make up their mind. Either they wanted the public corporations to be the instruments of Ministers and State Departments, or they wished them to have a proper degree of independence. The Ministers said that they must have more powers than the Ministers had over the public corporations before the war, and, secondly, that they had no intention of subjecting the Boards to day-to-day interference, or to meticulous intervention by political authority. They were, he continued, on new territory, and there were many things besides Parliamentary questions which were more important in the conduct and management of socialized industries. There were questions, for instance, of the place which workers, staff, and technicians occupied in the undertaking, and questions of "consultation." Questions could be put to Ministers over a considerable field. They could clearly be put to the Minister where he had the power to do something and had not used it. If it was held that the Minister should give a general direction to a public corporation, Mr. Morrison thought that it would be in order to put down a question to ask a Minister

either to issue such a general direction or to refrain from doing so. There were, he added, various matters on which the Minister had specific powers. He had to approve capital expenditure programmes; he had to set up the consumers' councils, and he could refer matters to the consumers' councils. He got reports from the consumers' councils. He approved the programme for research. He could direct the Boards, when doing certain matters, to apply for authority to the Minister. All fell within the limit of Parliamentary authority, and questions to the Minister would be admissible.

Mr. Morrison ended by saying: "If we are to have a socialized industry, which one side of the House says is right and the other side says is wrong, then we have to decide how the industry is to be managed. It is possible to argue that all these industries should be managed by State Departments—that is to say, Civil Service management, with the authority of the Ministers running all the way through. I could make out a case for that for electricity or gas; just as there is also a case to be made out against running those two industries in this way."

By this time the debate had lasted about three and a half hours, and Mr. Morrison refused to be interrupted by Members bobbing up and down. Watching the clock and coming to the Boards, he said that it was imperative to have on these Boards the best men they could possibly get to serve. At this point there was considerable Parliamentary laughter, which stimulated Mr. Morrison into saying that this was where politics began to creep in. Strangely enough no Parliamentary laughter followed this sapient, if somewhat ingenuous comment. In his best style the Lord President of the Council, amid sundry interruptions, said: "It is important that we should get the best men in the service of these Boards. If these men are to live a life which is really a Civil Service life, and are liable to be abused across the Floor of the House and subjected to questions attacking them and their commercial ability—perfectly legitimate questions—we shall not get the men to serve on these commercial undertakings, and we shall not get the best out of those who are there. Therefore I say that we have to feel our way and get on as best we can, but I also say on behalf of the Government that the idea that any question should be admissible will degenerate into a process of pin-pricking these great commercial and economic undertakings, will weaken their nerve and ability, and will reproduce in these public corporations the very evils which are alleged to exist in the Civil Service."

"We have to feel our way"; "we are prepared to think about it"; "we must watch as we go." We quote these sentences from Mr. Morrison's concluding comments. It seems to us that Parliamentary procedure, while excelling as a time-taker, shedding nothing of its cumbersome methods, becomes less and less entertaining or convincing.

RIGHT RELATIONSHIPS IN INDUSTRY

Addressing the February luncheon-meeting of the North Western Fuel Luncheon Club, on "The Right Relationships in Industry," Sir Frederick J. West confessed that with 40 years' experience in an industrial community he had no new formula for improving and consolidating mutual trust and understanding between management and workers. He believed, however, that lack of consideration of the human factor and the disappearance of the personal touch in industry, as much as anything else, were responsible for many of the troubles that developed between employers and workers. Sir Frederick went on to describe the operation of the works and staff committees in his own Company; of the many items discussed he suggested that one of the most important was the disclosure of the state of the order book, whereby workers became imbued with a satisfying sense of security in knowing that the volume of work ahead removed the dread of unemployment. In most concerns, he said, would be found a body of men able to set a good example to others, who took sincere pride in their work and constantly endeavoured to maintain the honour and reputation of their shop. They invariably demonstrated willing loyalty to the employer and resented the settlement of differences and disputes by a mere trial of force.

DEVELOPMENT IN RURAL AREAS

Several of the undertakings in the Severn Valley and Gas Consolidation groups are situated in rural areas. Investigation has shown the possibilities of the development of gas loads useful alike to the community and the undertakings themselves. In a paper to the Western Junior Gas Association—appearing in the March issue of "GAS," published to-day—Mr. W. H. Tarn, of the Cheltenham and Gloucester Companies, referred to how some of these possibilities have been translated into fact. As one example, he instanced an installation of incubator units for the hatching of chicks, representing an annual consumption of 1¼ million cu.ft. Then there are sterilizing outfits for farms and dairies, while the small engineering works, blacksmith, or garage, is always a potential user of equipment for oxy-coal gas cutting, brazing, preheating of castings prior to welding, and so on. Again, almost every small town has its printer, and into the picture steps gas for linotype heating and stereo metal recovery. Then there is food production; and the author referred to one firm engaged on a continuous process. Here gas is consumed 24 hours a day for six days per week. The consumption, at 2 mill. cu.ft., is not enormous, but it has added 8% to the output of the particular undertaking concerned. We thoroughly agree with Mr. Tarn when he says that, if a survey was taken of the potential load in any town, however small, some startling information would be brought to light.

GAS FOR STEAM RAISING

Also published in the March issue of "GAS" is a thorough and painstaking paper given to the London and Southern Junior Gas Association by Mr. W. Johnson, of the Wandsworth and District Gas Company, and Mr. N. Grater, of Controlled Flame Boilers, Ltd. The object of the paper was to discuss the use of steam for process heating and the part which gas can play in producing steam for this purpose. The opening paragraph of the Ministry of Fuel and Power *Fuel Efficiency Bulletin* No. 25 starts: "Steam is industry's most wonderful, flexible, adaptable tool." If, remark the authors, steam is a beautiful tool, then with a completely automatic gas-fired boiler it becomes more flexible, easy to produce, and consistent in quality. Messrs. Johnson and Grater go on to say that this fact is often ignored by industrial gas engineers either because: (1) They are afraid that the capital cost might lose the business and adopt direct heating by gas, or (2) they have more confidence in their ability to provide a direct gas installation and thus avoid steam pipes, traps, and all the other supposed complications of steam supplies. They are sometimes aided and abetted in this by the users' own misconceptions about steam, which are based on their knowledge of solid fuel fired boilers, involving, as they do, a special chamber to house the boiler, fuel storage, constant attention for stoking, cleaning and control. The authors suggest: (1) That steam is the better way of providing low temperature heating (180° to 300°F.) than direct heating by gas, particularly when even heating is required or the product is liable to burn. (2) That the user will adopt steam, in spite of the higher costs of installation, when he knows that an automatic steam boiler is no more trouble than, say, a gas cooker, and can be housed as easily as a water heater. (3) That a steam installation is easy to install and is trouble-free. (4) That steam from a gas-fired boiler is often the better reply to an electrical heating project where it is difficult to house gas burners or provide adequate heating surfaces. Messrs. Johnson and Grater went into considerable detail regarding gas-fired steam boiler installations, and the paper was followed by a long and useful discussion, many of the speakers commenting on the importance and timeliness of the contribution.

SCRAP SHORTAGE

The Economic Survey for 1948 published last week as a White Paper confirmed that steel, more than anything else apart from dollars, will be the limiting factor in industrial expansion this year. The maintenance of steel output will in turn depend on the amount of scrap that can be delivered to the steel works. Stocks of scrap are being used up rapidly to maintain the current high rates of steel production, and have fallen to little more than two weeks' consumption. Required imports of scrap for steel making are put at a minimum of 850,000 tons, but if more

than this can be obtained it could be used by the industry and relieve pressure on pig iron supplies. Before the war one of our main sources of supply was the United States, but this source has dried up and there is no significant source of supply in sight other than Germany. Negotiations are going forward to secure up to 1,000,000 tons of scrap this year from this source, but they are not yet completed and the collection and transport of such a quantity will be a formidable task. Earlier in the week the Minister of Supply had informed the House that although the general scrap position had improved slightly in recent weeks the longer term outlook remained serious. Accordingly an independent committee of three, with Sir Graham Cunningham as Chairman, had been set up to consider and report on what special measures could be taken to secure increased supplies of scrap. The Committee is expected to report informally on the German scrap position within a few weeks, and it will then turn its attention to other, including home, sources. The contracting side of the gas industry has a vital interest in the amount of steel available for home consumption and, to a smaller extent, in the matter of contributing to the amount of scrap available for the steelworks. One of the most difficult problems to be dealt with is the price of scrap. This has been pegged at the 1939 level and until recently the scrap trade appears to have been satisfied with the price. A higher price would not necessarily bring in more scrap and it would certainly tend to raise the price of steel.

"THE TRADE AND TECHNICAL PRESS"

This was the title of a compact, informative, and stimulating paper given last week to the Royal Society of Arts by Mr. Roland E. Dangerfield, Managing Director of the Temple Press, Ltd. There can be no doubt, he said, that industry as a whole is well covered by its own Press, and its journals may justly claim to be also the historians of industry, for in their pages will be found faithfully recorded the only complete histories of the industries which they represent and, in many cases, helped to pioneer from the earliest days: "Proprietors, executives, and editors alike," he continued, "devote their lives to working, sometimes with almost fanatical fervour, for the cause which they have at heart, not only through their journals, but also in many other helpful ways." Speaking of the partnership between journal and industry, the author commented that, close and intimate as this may be, complete editorial freedom remains, and that a journal which allows its policy to be dictated by outside interests can never gain the enduring confidence of its readers. Mr. Dangerfield mentioned that, on the score of age, pride of place must go to the *Mining Journal*, which was founded in 1835, and is believed to be the oldest journal of its kind in the world. "The Builder" was established in 1842, and our own "JOURNAL" in 1849.

Personal

Mr. J. H. H. MAGSON, Technical Assistant to the Peterborough Gas Company, has been appointed Works Chemist to the Dover Gas Company. Before the war, Mr. Magson was Technical Assistant to the Dorchester Gas Company and later served in the R.N.V.R. from 1940 to 1946.

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Mr. R. E. P. HOSKIN, Works Engineer to the Peterborough Gas Company, has been appointed Deputy Works Superintendent to the Norwich Works of the British Gas Light Company. Mr. Hoskin was previously with the Oxford and District Gas Company and the Cardiff Gas Light and Coke Company.

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Mr. H. J. BLAKELEY has been appointed Assistant Engineer at the Watford Works of the Watford and St. Albans Gas Company. He was previously employed by the Preston Gas Company and is the holder of the Ordinary Grade Certificate of the Institution of Gas Engineers (Manufacture) and the National Certificate of the Institution of Mechanical Engineers, and was a member of the Manchester and District Junior Association of Gas Engineers. Mr. Blakeley was in the Army for six years, serving with the Royal Engineers, and was released in 1946 with the rank of Staff Captain. In 1945 he was appointed Controller of Gas Supplies, Province of Westphalia, Germany, under the Control Commission.

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Dr. W. R. N. FRIEL, M.B., Ch.B.(Edin.)., M.R.C.P.(Edin.), Certificate in Public Health (Birmingham University), has been appointed full-time Medical Officer to the Birmingham Gas Department. He has had considerable Army service, having reached the rank of Lieut.-Colonel, and is at present stationed at Dudley Road Hospital; he will take up his new duties on July 1. He will be responsible for the supervision of the health of the whole of the employees of the Department, numbering approximately 4,000. Dr. Friel in addition to examining sick and injured workpeople will advise the Department on matters of general hygiene and working conditions, investigate the causes of dermatitis, epithelioma, &c., and possible remedial and preventative measures, and supervise the Department's rescue, fire, and ambulance brigade.

Obituary

The death has occurred at the early age of 47 of Mr. E. ROWLAND WILLIS, Station Engineer at the Bow Common Works of the Gas Light and Coke Company. Mr. Willis, who had been in indifferent health for some time, was educated at St. Paul's School and started with the Brentford Company at Brentford Station in 1916. He served with the Forces in France during the latter part of the first world war. On his return he was transferred to Southall as Works Assistant, promoted to the rank of an Engineer and ultimately Deputy Station Engineer at the same station in 1941. He became Station Engineer at Bow Common in 1942.

Diary

Mar. 18.—**Midland Association of Gas Engineers and Managers**: Annual General Meeting. Queens Hotel, Birmingham, 2.30 p.m., preceded by luncheon, 12.45 for 1 p.m., at which Dr. Harold Hartley, President of the Institution of Gas Engineers, will be the guest of honour.

Mar. 18.—**Industrial Gas Development Committee.**—Gas Industry House, 9.30 a.m.

Mar. 19.—**London and Southern Junior Gas Association**: "The Operation of a Combined Production, Records and Costing Department," L. R. Hodge (Tottenham), and "Some Practical Application of Production Records," F. O. Hawes (Tottenham), Gas Industry House, 7 p.m.

Mar. 19.—**North of England Gas Managers' Association (Auxiliary Section)**: Additional Spring Meeting: Display of welding films with explanatory lectures by J. P. Gaunt, M.Inst.W., by courtesy of the Oxley Engineering Co., Ltd., Lecture Theatre, Newcastle-upon-Tyne, and Gateshead Gas Company, Grainger Street, Newcastle, 2.15 p.m.

Mar. 20.—**Manchester District Junior Association of Gas Engineers**: Address by Dr. Harold Hartley, President of the Institution of Gas Engineers. Annual Dinner, Manchester.

Mar. 30.—**Southern Association of Gas Engineers and Managers (Eastern District)**: "The Removal of Hydrogen Sulphide from Coal Gas," G. U. Hopton, B.A., B.Sc., A.M.I.Chem.E., Fulham Laboratories, Gas Light and Coke Company. Gas Industry House, 2.30 p.m.

April 1.—**Solid Smokeless Fuels Federation**: Executive Committee, Dorchester Hotel, Park Lane, W.1, 11.30 a.m.

Apr. 8.—**Midland Counties Coke Association**: Annual General Meeting, 2.30 p.m.

April 16.—**Institution of Chemical Engineers**: Annual Meeting, Connaught Rooms, 11.45 a.m. Luncheon 1 p.m.

NATIONALIZATION AND CO-PARTNERSHIP

Employees of the Cambridge University and Town Gas Light Company have no intention of allowing their co-partnership scheme to suffer extinction under nationalization without an effort to secure its retention. Following requests from many members of the scheme a meeting was held at the works on Feb. 24 to discuss what steps could be taken. The large attendance of co-partners were unanimous in their opinion that definite action was required, and after a full and outspoken discussion the following resolution was adopted:

"That this meeting views with great concern the loss of income which will be caused by the winding up of the Company's co-partnership scheme under the Bill to nationalize the gas industry, and urges H.M. Government to reconsider the case of co-partners, who should not be deprived of the concessions which they have enjoyed for the last 39 years. It is considered that co-partnership should be retained under nationalization, but if this is not possible co-partners should not have their incomes reduced; adequate compensation should be paid, and the terms of such compensation should be clearly stated in the Act."

The resolution has been forwarded to the Prime Minister, the Minister of Fuel and Power, the British Gas Council, the Industrial Co-Partnership Association, the National Joint Industrial Council for the Gas Industry, and all gas companies which operate co-partnership schemes. A deputation representing the Company's 214 co-partners is to wait on the Borough and County Members of Parliament and the Trade Unions to enlist their assistance in obtaining satisfaction in accordance with the terms of the resolution.

THE GAS BILL IN COMMITTEE STAGE

We continue our outline, started in the "Journal" of Mar. 10, of the proceedings during the Committee Stage of the Bill for the Nationalization of the Gas Industry.

ARGUMENT on Mar. 9 was concerned with an amendment (ultimately withdrawn) to insert at the end of sub-section 7 of Clause 1 of the Bill the following: "Every Area Board shall, after consultation with the Gas Council, prepare and put in force arrangements whereby incentives to increase efficiency, output, and economy shall be provided for all persons in the regular employment of that Board."

Co-Partnership and Incentives

Moving the amendment, Mr. Heathcoat Amory (C., Tiverton) said he was sure all would agree, both those who believed in nationalization and those who did not, that in the case of a big organization of this kind there was a danger that the human element would be swamped. It was necessary, therefore, to have the highest teamwork throughout, with no room for apathy or disloyalty. He continued: "We deplore the fact that under this Bill the old co-partnership schemes are killed, although we realize that most of them cannot be continued under this Bill. If the Minister is in any doubt whether these schemes were appreciated, I suggest that he talks to some of the co-partners and listens to what they have to say. They will tell him that the schemes were very much appreciated. These schemes have two objects—harmony and efficiency. I am going to deal with only one aspect of incentives, although we hope that there will be ways of including other elements as well. The first element is joint consultation; the second is to find some way whereby those working in the industry can share in a practical way in increased efficiency, and the third, if at all possible, is to find some way in which those in the industry can share in the ownership of the industry. The third element will be the most difficult to ensure in this case. . . . In regard to the second element, if the industry is properly and efficiently run, then some operating units will undoubtedly succeed in reducing their costs. We want the gains arising in these circumstances to be shared between the consumers and those working in the industry."

The Parliamentary Secretary to the Ministry of Fuel and Power (Mr. Robens) replied that it was very important that there should be incentives in industry, and the whole trade union movement had veered round to accepting this principle. Ten or 15 years ago he was completely against incentive bonuses, but properly organised incentive bonuses, which were a reward to the worker who made an extra effort, if properly controlled, had no ill effects. More and more incentives would be brought into industry. He added that the Bill did not upset existing machinery. It placed firmly on the Gas Council itself, and not on the Area Boards, the responsibility for the conclusion of agreements with respect to the establishment and maintenance of machinery for the negotiation of terms and conditions of employment. Within that duty laid on the Gas Council one could have incentive bonus schemes worked out by both sides of the industry. They agreed wholeheartedly that they wanted the finest type of consultative machinery that it was possible to envisage. They wanted the worker to feel that he was part and parcel of the industry and they wanted him to share in the efficient results that he was helping to bring about.

Mr. Nigel Birch (C., Flintshire) said that the Minister probably knew, from interviews with people on the subject of co-partnership, that they feared that control would be so remote from them that everything would be flattened out.

Reasonable Negotiations Unimpaired

"I suggest that we might have some experience brought to bear on the argument," observed Mr. R. Ewart (Lab., Sunderland), who continued: "There is an impression that everything is right and proper in the gas industry, and that the purpose of this Bill is to disturb the tenor of reasonable negotiations. That is simply nonsense. The system in operation at present is that while there are area negotiations on wages, and while basic rates are levelled by the regional boards, very often the regional councils have eight to 12 different grades for rural and urban districts. It is most difficult to introduce incentive operation in places like that, because of the difficulty of persuading the small unit controller to comply with the large unit controller within a given region. There is no direction, either central or regional, given to employers and backed by co-operation and agreement with the trade unions on generalized incentives in the regional boards.

"That tends to have the result that when there is a dispute it goes to the central body, when the matter could conveniently be settled by co-ordinated policy at the area board or regional board level. We must recognize that we are dealing with a unified and co-ordinated industry. We shall be speaking to employers who speak with a unified voice and who have not to follow the innocuous procedure which operates at present of meeting any private employers federation before the area or national council meets, and determining policy in the face of advanced negotiations as proposed by the trade unions."

The effect of the Bill, maintained Mr. Boyd-Carpenter (C., Kingston-on-Thames) was to annihilate a whole mass of rather varied incentive schemes which had been run by a large number of gas companies. Hence the need for the amendment. It should be laid down, either centrally or to the Area Boards, that it was their duty to put something in the vacuum which the Bill would otherwise create—something to restore the very valuable schemes which were being wiped out by the fact of nationalization.

A Duty on the Gas Council

The Minister of Fuel and Power (Mr. Gaitskell) replied that the Bill imposed a duty on the Gas Council to seek consultation with a view to setting up machinery. That machinery might provide either for direct negotiation at the Area Board level or for direct negotiation at the national level, or both. Indeed, the outcome would most probably be both. Of course it was desirable to achieve efficiency and economy. "But it is one thing to say that, and another to impose on the Area Boards the duty of introducing schemes of this kind. We do not think that is the right way to go about it. We take the view that, in the first place, incentives cannot be separated from the question of wage demands." And it should be borne in mind that co-partnership schemes covered less than half the workers in the gas industry.

Area Grouping

On resumption on Thursday last Mr. H. V. Raikes (C., Wavertree) said that one of the biggest headaches the Minister was likely to have was that, if he formed his Area groups on the wrong basis, he would be faced not only with considerable disorganization, but with a wastage of capital. Mr. Raikes continued: "About the most effective large-sized unit in the gas industry at present is the Severn Valley group. In the course of seven years it has not only doubled its sales, but has very considerably reduced its capital charges. I do not suppose that over the whole of his scheme, the Minister hopes to double his sales in the course of the next twelve months or, indeed, very largely to reduce his capital charges. The Severn Valley group, under the new predetermined set up, is to be sub-divided into four different areas instead of being run on its own in the way it is being run at present."

Col. R. S. Clarke (C., East Grinstead) suggested that it was a mistake arbitrarily to define beforehand what should be included in the various areas, and that it would be much better to do it deliberately, even if it involved legislation by order later on. He wanted to see the measure as flexible as possible because it had been found that integration involved a number of factors and it was very difficult to carry out from an armchair or an office table. A number of individuals as well as a number of companies should be consulted and the local circumstances examined. He was glad that mention had been made of the experience of the Severn Valley group. It seemed a great pity that an organization of that sort, built up over a term of years with great care and with a successful history, should be sub-divided into four separate entities at a time when the object of the Bill was to integrate instead of disintegrate.

The Minister of Fuel and Power (Mr. Gaitskell) replied that the question they were discussing was not whether or not there should be public ownership in the gas industry. That was settled in the principle of the Bill. They were concerned more with the question whether or not the areas should be predetermined broadly in the way indicated in the Bill. As to predetermination, it was well known to the Committee that the Heyworth Report strongly emphasized that any other method of attempting to achieve a satisfactory settlement was doomed to failure. He continued: After the publication of the Heyworth Report, and when it became known that the Government intended to introduce a Bill to nationalize the gas industry, the British Gas Council were invited by the Ministry to give us their observations on the question of whether or not the set-up proposed in that Report was appropriate always, of course, on the assumption that public ownership was involved. It would be open to them to have recommended to us that there should be 50 or 100, or 200 areas, and, had they done so, we would have given it careful consideration. But what was their recommendation? It was published in the trade Press. I have here the "GAS JOURNAL" for July 30, 1947. Their recommendation was that there should be 13 areas. The Heyworth Committee recommended 10, and we have compromised, as it were, between the two and recommended 12. Whether or not

there should be 12 or 13 is, I submit, a point of detail which can be discussed when we come to the Schedule, but it is quite clear that not only the Committee set up by Major Lloyd George but the Gas Council, representing the gas industry, have come down firmly in favour of this kind of number of areas. In those circumstances, I cannot see any point in starting another survey—with, presumably, the same advice to be obtained from the Gas Council—to see whether we should not have twice, three times, or four times the number of areas. It simply does not make sense. I would also remind Mr. Raikes, who referred to the danger of size, that the Gas Light and Coke Company, for instance, which most people would recognize as being an extremely efficient undertaking, is, broadly speaking, the same size as the area recommended in the Bill. Therefore, there is no reason to suppose that this is too large.

Mr. Gaitskell went on to say that they must not confuse the question of the size of areas with decentralization. One could have 100 different areas, all much smaller in size, and yet have a highly centralized administration, because there might be in each of those 100 areas everything decided by, and going through one committee or one man. Equally, one could have 12 areas, as in the Bill, and yet have complete decentralization, because underneath those areas there would certainly be sub-units of management. There was, therefore, no reason why, because they had 12 areas—and each one covered as many as 100 undertakings at the moment—that need necessarily lead to a rigid or centralized administration. He emphasized that they were putting into the Bill as statutory bodies the 12 area Boards only. This did not mean that there would not be a fairly elaborate structure built up underneath that by the Area Boards themselves. The Ministry happened to be fairly well informed on the gas industry, as the industry knew. It so happened that over a long period of years in dealing with questions of steel allocation and of price control, a great body of knowledge has been built up, and all the people concerned—the industry, the Heyworth Report, and the Ministry—agreed broadly on the same principle and the same structure.

Mr. Brendan Bracken (C., Bournemouth) remarked that the Minister had quoted some conversations that he or some of his officials had had with the British Gas Council. They did not consider the B.G.C. infallible. If the Minister attached so much importance to the advice given to him by the Gas Council, why did he not take notice of their statement that nationalization would do the most grave injury to this country? When the Minister quoted from the British Gas Council, he ought to find another authority for his Bill.

The Position in Scotland

There were one or two points which he wished the Minister would consider. For instance, in the Scottish area, the Area Board would have to look after territory extending over more than 34,500 miles. He did not believe that the Scots, with all their genius, could produce a man capable of supervising effectively 34,500 miles of territory. Furthermore, the Scottish Area Board would have to manage something like 193 undertakings. He thought this was quite impossible. He had no relief whatever in megalomania in business or in Whitehall, and in his judgment it would be impossible for one Area Board to look after the whole of Scotland.

Then they had had no explanation from the Minister as to what would happen if the many directors of the gas industry were precluded from participating in the management of the gas industry in future. The Minister knew that many directors of gas companies were full-time servants of their shareholders. They were not "guinea pigs"; they were hard-working men who had devoted their lives to the interests of the industry. At some time the Minister ought to reveal his intentions with regard to the directors now employed in the gas industry, for it was unfair to keep them without any assurance about their future.

This predetermination showed that their planners now had a sort of semi-theological zeal for centralization in Whitehall. He did not think this Bill could be improved at all; in his opinion, the only way to improve it would be to cut its throat from ear to ear.

Mr. Wingfield Digby (C., Dorset W.) remarked that he did not know where the new South-West area would be run from, and it was highly important that such a very scattered area should be in close touch with the headquarters of the Area Board. He had the impression that the lay-out of the areas had been arranged to suit the highly industrialized areas, and no one had bothered very much in this Bill about what would happen to the country areas where now they had gas undertakings dotted about among the larger towns. Had that problem been tackled? What kind of organization was proposed so that there should be some real benefit to those towns, instead of leaving them with nothing more than long-distance interference from some place about 100 miles away?

Possible Technical Development

The Parliamentary Secretary to the Ministry of Fuel and Power (Mr. Robens), replying to a point made by Sir Hugh Lucas-Tooth (C., Hendon S.), said that at this stage they could not say exactly what would be the technical developments in the gas industry. It might be that at some date it would prove to be most economical to develop the complete gasification process on a large scale. As a consequence, it might be that they would have plant in the coalfields, say, in the Midlands, for the distribution of that gas to the London area. In those circumstances of technical development, if it were found economical, Area Boards might say, "This is a job which we would like the Gas Council to do. We would like them to do the job of complete gasification to control the base stations, and also the pipelines to the London area where we will take over distribution." That is the type of thing one had in mind. There might be all sorts of technical developments in the industry which Area Boards would consider were jobs for the Gas Council to do, because it would be more economic and more efficient.

Status and Functions of the Gas Council

Colonel Clarke raised a point in regard to the whole position of the Gas Council as opposed to the Area Boards. In the Bill an attempt had been made very much to reduce the powers and the functions of the Central Council as opposed to the Area Boards. "Here," he commented, "we have a Council which, to my mind, in spite of a little addition which we put in during the course of our consideration of this Clause, is still very weak, very much in an advisory capacity. . . I feel that, under this Bill, the gas industry and the Gas Council, owing to its somewhat new, indeterminate construction, will be at a very great disadvantage in any negotations which may have to take place with the Electricity or the Coal Boards."

It was contended by Mr. Nigel Birch (C., Flintshire) that the Gas Council was really neither one thing nor the other. It was not a Board with its own executive power, and, on the other hand, its consultative functions seemed to be wholly superfluous. The Minister might, if he saw fit, consult with the Gas Council. That, surely, involved there being a department at the Ministry of Fuel and Power competent to deal with gas questions, as, otherwise, it would be no earthly good referring a matter to the Minister at all. Therefore, on that, he did not see where the Gas Council came in. As far as promoting and assisting "the efficient exercise and performance by Area Boards of their functions" was concerned, that could perfectly well be done, and would, in fact, be done, by the Minister. Nor did he see any particular functions necessary to be carried out by the Gas Council in the matter of finance. It would be perfectly simple for the finance of Area Boards to be arranged quite separately through the Treasury, with the aid of the Minister.

On the question of the manufacture of gas appliances, that, again, could perfectly well be carried on, if so required, by the Area Boards. It seemed to him that the Gas Council had either insufficient power, or was wholly superfluous.

Mr. Boyd-Carpenter (C., Kingston-on-Thames) remarked that members of the Gas Council would be the Minister's appointees. He would, therefore, inevitably exercise enormous influence over them. Before he appointed them, he would have to make up his mind whether what he wanted was a decorative facade adorned by various senile noblemen or gentlemen, or an operative and working body. If the main purpose of this Gas Council was really to be advisory, then it was extremely doubtful whether it was worth the money, the trouble, or the time. They must press the Minister for a statement as to what in fact the Gas Council was going to do. What were his intentions with respect to it? As part of that, he (the speaker) thought we were entitled to be told whether it was intended that this body should acquire a large staff. He had a horrible suspicion that, following the illustrious precedents of other nationalized Boards, one of its first steps would be to acquire a large staff, with large emoluments far above the ordinary Civil Service standard, and with appointments where personal qualities were perhaps more doubtful. Were they going to have sitting round the Gas Council a large staff or not? Was it going to be simply a body of distinguished gentlemen with a secretary, and a shorthand writer, or was it going to acquire a large staff, Was it going to acquire its own staff of technical advisers, or not? If it was, how was that going to fit in with the Ministry of Fuel and Power? In other nationalized industries, they had seen the appalling tendency to accumulate staffs. If the Minister was not extremely firm, not to say ruthless, in this matter, he (the speaker) was sure they would see the accumulation on top of the Area Boards, who were supposed to do the work, of the Gas Council, with a large staff, and of a largely expanded Ministry of Fuel and Power—the last two simply existing to write letters to each other.

Mr. Gaitskell, in reply, said that the Gas Council should have the right to obtain any information it wanted from the Area Boards. There was no reason why there should be any restriction on that particular power. As regards the manufacture of plant and fittings, he dealt with that in some detail at an earlier meeting of the Committee. The position was that the Council itself had the power, and so had the Area Boards subject to the approval of the Council, and the matter was left open. The Gas Council was a federal body. It was in a sense up to the

Area Boards themselves to make what they liked of it within the framework of the Bill. The fact that the Council had not got extensive powers over the Area Boards did not, in his view, necessarily mean that it would be a powerless and ineffective body in dealing with other nationalized boards in its position in society generally. He thought it was reasonable to suppose that the fact that it was composed of the 12 Area Board chairmen would tend to be a strengthening influence in that respect. The real question was whether they should give the Council greater powers over the Area Boards. He had taken the view that they should keep these powers down to a minimum.

So far as duplication is concerned, continued Mr. Gaitskell, he could give the Committee an assurance that it was not their intention that there should be any duplication between the Ministry staff and the Council staff, and, as regards other staffs, that would depend on what the Area Board chairmen, who were members of the Council, decided it should do. If it was the wish of the Area Board chairmen that the Council should, for instance, develop research in a big way, or go in for the manufacture of plant in a big way, it could do so. They might decide: "We would like the Council to have a big statistical section, and we will concentrate statistics there," or they might decide not to do so. It was up to the Area Board chairmen, who were, after all, members of the Council, to decide for themselves. As regards the Ministry, there was no intention, and indeed no reason, why there should be duplication.

Mr. D. Heathcoat Amory (C., Tiverton) referred to the danger of the growth of paper work between the Gas Council and its subordinate headquarters. When an organization like this was set up there was the tendency for the central organization to demand returns of one kind or another from its subordinates. Finally it saw the red light, and at once said, "let us call for a report." Sometimes that was caused by panic, sometimes because of misplaced enthusiasm, sometimes because of lack of consideration, and sometimes because of the desire of an official to justify his position. At all times there was a sense of frustration and despair on the part of the subordinates, who felt that their superiors did not trust them.

Research

The question of research was then brought up by Mr. Amory, who said that, in Clause 3 of the Bill there appeared to be two kinds of research envisaged. The first was a general programme of research arranged by the Gas Council, but not necessarily conducted by them. The second was a programme outside that general programme which, presumably, would be carried out by the Area Boards. It was laid down in regard to the second outside programme, that before engaging in it, Area Boards must obtain the prior approval of the Gas Council. He saw no objection to the two different kinds of research, but he did see some objection to the necessity for Area Boards to get prior approval before engaging in research which primarily concerned their own areas. They wanted to encourage the greatest possible initiative and competition. Second, they suggested that the results should be pooled. On the question of initiative, one never knew where new ideas would come from. They did not by any means always come from the top. They felt that prior consultation was right, but that prior approval was wrong. It might be said that the research director of the Gas Council would be a reasonable man. In general, he might be, but a clever research worker was not always the most conciliatory of people. They felt that if the director of research for an Area Board still felt after consultation that he could do the job best, he should have the chance of allowing his staff to get on with it. The greatest possible freedom at all levels must be the dominating principle of successful research. Against this, claims for tidiness, co-ordination, and the avoidance of overlapping, were secondary.

Mr. Gaitskell: "I certainly agree that one does not necessarily want a completely rigid centralized dictation of research. However, here we have a sphere of activity where the Gas Council must do most of the work. Research on the scale which will be required in industry needs a larger organization than that required in certain other activities. It is important not to waste the available scientific manpower and resources which are extremely scarce. It would be regrettable if the effort to intensify research were dissipated through too many people trying to do the same thing and, consequently, not covering a sufficiently wide field."

They felt that the Area Board must go to the Council and say, "Look here, we want to do this; can we have your approval?" One Area Board must not act on its own without getting the agreement of the other Boards.

The Committee adjourned.

The London District Headquarters of the British Gas Council and Federation of Gas Employers have been moved from Gas Industry House and are now located at 19, Sheffield Terrace, Church Street, Kensington, W.8. (Tel. Western 8141.) Mr. F. L. Ffoulkes is the London District Secretary of both bodies.

OPPOSITION RE-AFFIRMED

At a meeting of the Eastern District Board of the British Gas Council at Cambridge on Feb. 20 detailed consideration was given to the Gas Bill and the following resolution was unanimously carried:

"That this meeting re-affirms its opposition to nationalization and pledges its support to the British Gas Council. It deplores the inadequate compensation to proprietors of undertakings, whether company or local authority owned, and also the loss of co-partnership rights. It also considers that some provision should be included in the Bill for the absorption of the staffs of the British Gas Council and Federation of Gas Employers and the permanent District officials into the new Gas Council and/or Area Boards.

"This meeting of the Eastern District Board, mainly composed of officers of gas undertakings, also feels that adequate compensation should be provided for in the Bill for the Directors of gas undertakings."

CO-PARTNERS' GIFTS TO DIRECTORS

Large folding sheepskin blotters, inscribed and bearing the Company's crest, have been presented to the Directors of Tottenham and District Gas Company by the co-partners to mark the recent centenary. The presentations were made at a meeting of the Co-partnership Committee of Management by Mr. W. C. Russell, Stores Superintendent, who has been with the Company for 41 years, and who spoke for the subscribers. The Directors present were Mr. Edward C. Woodall, O.B.E., Chairman and Managing Director, Colonel Harold C. Smith, C.B.E., D.L., Deputy Chairman and Managing Director, Mr. H. G. Palmer, and Mr. C. S. Pryor. Mr. Henry Woodall, who was Chairman for many years before being succeeded by his son, and Mr. E. J. K. Fussell were unable to attend.

Mr. Russell recalled that the Company had made gifts to the employees, handsomely celebrating the centenary, and the Co-partners' Committee felt they would like to have a share in the celebrations. It was first thought that a plaque might be put in the board room but after consideration it was felt that the board room might eventually be occupied by an under-secretary who was under-secretary to some other under-secretary and would not care about the Tottenham and District Gas Company. It was finally decided to present to each Director a sheepskin blotter as a personal gift. He was honoured to make the presentation on behalf of the Committee with their very best wishes and as a proof of their lasting interest in the Company.

"One cannot serve the Company for so many years without having some regret that an era might be passing," he added.

Mr. Edward C. Woodall, on behalf of the Directors, thanked Mr. Russell for the unexpected and kind gesture. The Directors, he said, shared the regrets that the Company was possibly coming to a close after its long life of 100 years. For some it was a livelihood and to all an interest, and a very great interest, as it had given contacts with all sorts and kinds of employees in the Company which would be missed. His association with the Company had given him personal friendships which he thought need not disappear with the disappearance of the Company, though there was still a little time to live, some little work to do. He assured the Committee that the Directors had always had the interests of the Company and the people's interests at heart.

They had been only too pleased to do something to celebrate the centenary and to give some pleasure to the employees. He hoped that the gifts were a tangible expression of respect which both sides felt for each other.

GAS STAFFS AND THE BILL

A supplement to the February issue of *Thermfare*, the journal of the British Gas Staff Association, summarizes the clauses of the Gas Bill affecting gas staffs, and records that the Association has presented to the Minister of Fuel and Power a statement regarding the nationalization of the gas industry and advocating that provision be made for the representation of gas employees on the proposed central authority and area boards.

The Association has also requested that, owing to the many special emoluments, peculiar to the industry, provision should be made in the Bill for the retention of such special privileges or that full compensation be specified. It was asked that if within ten years any existing employee relinquishes his employment because he has been required to undertake duties which did not compare reasonably with previous duties, or if his services were dispensed with or his emolument reduced, he should receive compensation as if he had lost his employment on the vesting date.

The Association also requested the Minister to include in the Bill an Incentive Scheme based on the "basic price" system whereby a bonus is payable to employees if, through increased efficiency, it became possible to reduce the price of gas. The Ministry has been interviewed on these points and now steps will be taken, either during the passage of the Bill through the House or later, as the regulations are made, to bring these matters again to the notice of the Government in the interest of the industry and its staff.

COAL COMPOSITION

Dr. R. Logoz, Manager of the Lausanne Gas-Works, in a lecture on the "Composition of Coal," given to the Swiss Association of Gas and Water Engineers, and published in the February *Monatsbulletin*, approaches the subject from the point of view that coal formation has to be known before its composition can be understood. Outlining notions held some 160 years ago, the lecturer suggested that, because these early hypotheses were expressed as if they were results of direct observation, it was not until about 1942 that serious investigations into the subject were made. In his lecture, he left aside the physical investigation into coal, results of which, arrived at by English physicists, were published in the *Bulletin* of September, 1947; he dealt with the chemical structure of coal.

"Then the coal came."
[*Reproduced by permission of the proprietors of "Punch."*]

About the vegetable origin, said Dr. Logoz, there is no longer any doubt, since it has been demonstrated in the laboratory by an experiment which he described. Although the coal produced had no specific nature it approximated closely enough to certain types won from the soil. The rest of the history of coal in its vegetation stage was described as part of the rhythm of vegetation. The first "upward" movement was brought about by the action of chlorophyl. The results of Willstaetter's research are briefly outlined so that the equation arrived at is

$$CO_2 + H_2O = H_2CO + O_2$$

Carbon dioxide + water = formol + oxygen.

Formol, the lecturer explained, is the source of the majority of synthetic resins, and also, through its polymerization, the cause of more complex chemical compounds (sugar, starch). Dehydration produces still more complex compounds (fats and gum, and resins which are found almost "unbroken" in certain types of coal). From among all these different products, lignin and cellulose were treated in greater detail as to their chemical composition.

Discussing combinations of carbon and of oxygen, the author noted that all reactions in which oxygen plays the most important part lead to loss of oxygen and an increase in carbon. Here the "downward" movement of the vegetation rhythm begins, where complicated chemical structures are broken down into their constituent elements. If this process is hindered because of lack of oxygen, there results an increase in carbon atoms and a progressive elimination of oxygen atoms in the molecules. The most important part in the formation of coal is played by oxygen, about the position of which in the coal little it known.

Explanation of coal formation begins with a reminder about chemical processes which can be observed on compost heaps. Via the action of bacteria, peat formation, the disappearance of cellulose, the formation of a certain lignite composition, carbonization of cellulose is arrived at. Cellulose is the first to undergo carbonization because it has the highest oxygen content. A table drawn up by Professor H. Cassan shows how carbon, oxygen and hydrogen evolve to produce various types of coal.

ROYAL VISIT TO B.G.C. STAND

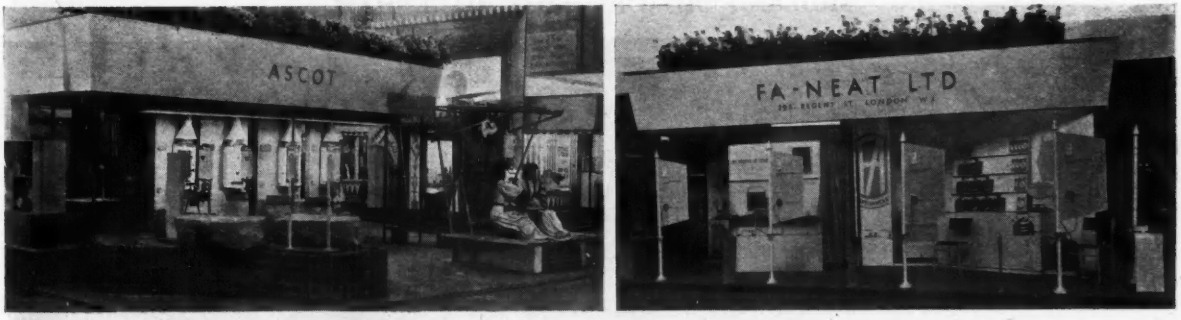
Princess Elizabeth and the Duke of Edinburgh, accompanied by Lord and Lady Rothermere and Lady Margaret Egerton, Lady in Waiting to the Princess, visited the British Gas Council's "Seven Ages of Woman" Pavilion at the Ideal Home Exhibition on Mar. 9. They were conducted around the exhibit by Mr. A. Brydone Seton, M.B.E., Chairman of the British Gas Council's Publicity Committee, and Mr. Reginald S. Hinder, Press Officer.

Both were keenly interested in the tableaux depicting the part played by gas throughout a woman's life, and made a close inspection of many of the latest appliances, especially the new gas cookers. The Duke was interested in the construction and workings of gas space and water heaters and washing machines, and questioned Mr. Hinder closely on the tableau showing an elderly couple at home. It was explained that the fire was gas ignited; the coke came from the gas-works; the old chap in the garden was using sulphate of ammonia, also from the gas-works, and the radio cabinet was made of plastics from the carbonization of coal.

Shots of the Royal visit to the "Seven Ages of Woman" pavilion are included in the Universal and Pathe news reels generally released to cinemas throughout the United Kingdom this week. Scenes of the visit, showing the Princess and the Duke inspecting the latest gas appliances, have also been included in recent television programmes.

Our Attention has been drawn by the Deodor-X Company of England, Ltd., Ellesmere Port, Cheshire, to a deodorant developed and patented by the firm for removing smell from the clothing of gas-workers whose tasks, for example, may entail the removal of oxide from purifier boxes. Excellent results, we are informed, have followed the use of this deodorant.

AT THE IDEAL HOME EXHIBITION



Shown above are two interesting examples of stand design at the Ideal Home Exhibition. The stand exhibited by Ascot Gas Water Heaters, Ltd., has been built on two levels. The lower level has a working display of the full range of Ascot water heaters, including an amusing pair of life-size puppets consuming tea from a "magic" teapot, supplied with an apparently unending flow of boiling water by a boiling water heater which has no visible gas or water connexions; the secret lies in the use of interlocking glass tubes. The raised terrace is designed primarily for discussion, but it also contains a number of displays dealing with the various Ascot publications.

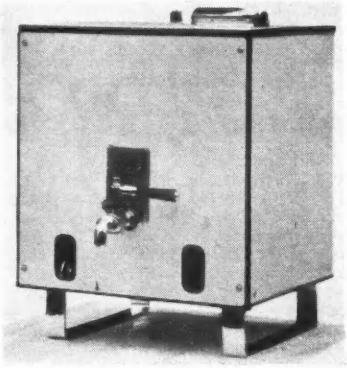
The attractive stand of FA-Neat, Ltd., shown at the right, makes good use of neat metal flags, the poles of which support metal tables carrying various appliances. A full range of FA products is exhibited; in particular, the new FA/7 convector fire is arousing interest. Most of the appliances are actually working.

A NEW TEA BOILER

A new gas-fired counter water boiler, produced by British Railways, London Midland Region, was demonstrated to a small group of gas engineers at Euston House, and later at Euston Station, on Feb. 25. The visitors were welcomed by Mr. E. Morgan, Lighting and Heating Assistant, and later the boiler was described by Mr. D. G. Winslow, Officer in Charge of the Gas Section, Civil Engineering Department, Watford, and the inventor, Mr. S. Bairstow, Divisional Chemist at Derby.

The boiler was designed to meet the following requirements: A reasonable thermal efficiency measured over 24 hours, even with very intermittent draw-off; a capacity to deal rapidly with peak demands; smooth lines, the draw-off tap being the only projection; capable of being easily maintained; incapable of unauthorized interference.

The appliance consists of three units—a feed tank, a generator and a storage tank. Water is boiled in the generator by a ring

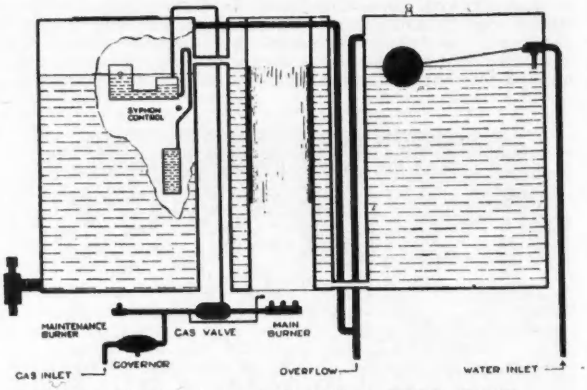


The new boiler as manufactured by Radiation, Ltd.

burner fitted with bray jets, the level in the feed tank being such that until the water boils it is not forced from the generator into the storage tank. It is therefore impossible for the generator to deliver non-boiling water. The heat losses of the storage tank are made good by a small burner which just keeps the water boiling. Both the generator and the storage tank are lagged to minimize heat losses and the feed tank and connexions are lagged to prevent condensation.

A unique feature of the boiler is the syphon control valve. When the storage tank is full, water flows into the syphon valve, throwing a pressure on to the relay valve and thereby shutting the gas supply to the generator burner. When approximately one gallon of boiling water is drawn off, the syphon valve automatically empties, releasing the pressure on the relay valve and turning on the gas supply to the generator burner. Provision has also been made for the introduction of a simple scale reducer which has recently been developed for use with the boiler on hard water districts.

The appliance demonstrated is being manufactured by Richmonds Gas Stove Co. (Radiation, Ltd.), and is a lagged storage automatic water boiler the purpose of which is to provide boiling water for making tea in tea pots. The delivery rate is 4 gall. storage for immediate delivery, replaced at an approximate rate of 4 gall. per half hour. The maximum gas rate totals 20,000



The boiler's symmetrical appearance is emphasized in a cross-section view.

B.Th.U. per hour, with a main burner gas rate of 18,500 B.Th.U. per hour, and a storage tank burner rate of 1,500 B.Th.U. per hour; the thermal efficiency is estimated at approximately 50%, in continuous use with a small intermittent user of 50 gall. per day.

The new design has also been interpreted by James Stott & Co. in the "Derby" boiler. This appliance has a reserve capacity of 4½ gall. of boiling water always available, at the cost of 2½ cu.ft. of gas per hour. The boiler has a recovery capacity of 8 gall. of boiling water per hour, and when 2 gall. have been drawn off from the reserve, the instantaneous heater portion, having a gas consumption of 32 cu.ft. per hour, is automatically brought into operation for re-building the reserve to the full 4½ gall., at which point the gas is automatically reduced to the 2½ cu.ft. per hour consumption.

The Federation of British Industries, together with the Association of British Chambers of Commerce and the National Union of Manufacturers have represented, when making their response to the Chancellor's appeal in which they had offered a voluntary standstill on prices, that there are a number of special points and difficulties arising under the Board of Trade Standstill Orders which there was not time to discuss and clarify before the operative date, Mar. 15. They therefore asked the President of the Board of Trade to agree to postponement to allow adequate time for discussion. The President has acceded to this request and an Order is being made postponing the date of operation of certain Standstill Orders from Mar. 15 to April 26.

MIDLAND JUNIORS VISIT DAGENHAM

A successful visit was paid by the Midland Junior Gas Association on Mar. 9 to the works of the Ford Motor Co., at Dagenham. In addition to more than 60 members, the party included Mr. C. A. Deas and Mr. J. E. Gray, President and Secretary of the London and Southern Junior Gas Association, and Mr. H. R. Hilham, Secretary of the Eastern Junior Gas Association. The above photograph was taken at the conclusion of the visit and shows, standing forward on the right-hand side, the President of the Association, Mr. S. Brockbank, and the Secretary, Mr. H. J. Reynolds.

MATERIAL HANDLING ON A PROVINCIAL GAS-WORKS*

By J. D. C. Woodall, B.A.(Camb.), Engineer and Manager, Maidstone Gas Company

MANY gas engineers are now faced with the extension and reconstruction of their works to meet the increased demands for gas and to make amends for the interruption of their normal programme of renewals during the last eight years. At the end of the war, through a combination of circumstances, we found ourselves at Maidstone at the head of the queue of those clamouring for new plant. Many of you will have pleasant memories of your visit to Maidstone in the summer of 1946, when my distinguished predecessor, Mr. W. A. Howie, was our President. The reconstruction of the horizontal retort house, which the Directors had decided upon in 1944, was then in progress, and the greater part of the new coal and coke handling plant had been installed. The whole plant will not be completed until the end of this year, but the first section, together with all the mechanical handling plant, has been at work for 14 months. I cannot yet give details of the carbonizing results which we have obtained to date, for we still have one old bench of retorts at work and the gas from the two plants is mixed and cannot be metered separately. I hope it will be of interest, however, if I describe the mechanical plant which has been installed in conjunction with the new settings. In the second part of this paper I shall refer to the methods we have adopted for the handling of materials in the yard and in particular to our method of emptying and filling purifiers which is somewhat unusual.

Mr. Muir Wilson, in a recent article in the "GAS JOURNAL," said: "We do all we can to take away from the men the idea that they are doing futile work, such as wheeling barrows when tractors should be used, poking pipes which ought never to be stopped, and using shovels when excavators should be used. These things may not appear to pay on paper, but the financial gain can be great because work is always done better by men who feel that their labour has some dignity above that of a donkey."[1] He told us last month how the need for poking pipes may be eliminated; to-day we will consider the barrows and shovels.

Machinery and Labour

The savings which can be obtained from the installation of machinery on a gas-works cannot be assessed as easily as appears at first sight. Alwyne Meade, writing in 1934, said that the savings of one man justified a capital expenditure of £1,000 to £1,200.[2] As the result of the rise that has taken place in wages since that date, I suggest that this figure is now not less than £2,000. But apart from any saving in wages obtained, the cost of installing machinery may be solely justified by the improvement in working results which is thereby achieved.

Financial considerations are not, however, at the present time of overriding importance. In 1934 there was no shortage of labour; in 1948 many engineers are at their wits end to find sufficient labour to man their works. Moreover, the Gas Industry is not too well placed for attracting labour in competition with other industries as there is a marked reluctance on the part of those seeking work to accept a dirty job. On most gas-works there are still many jobs which are not only dirty but are also dull and uninteresting since they require the exercise of no skill or intelligence on the part of the worker, and it seems unlikely in the future that it will become any easier to persuade men to undertake them. The elimination of the barrow and shovel and their replacement by carefully thought out methods for the mechanical handling of gas-works materials is the only possible solution to this very real problem. I shall deal, therefore, not so much with the details of the construction of our new plant as with the effect of the installation of this plant on the numbers of men employed in the various sections of the works and also, and this is of equal importance, the effect on their working conditions. It may be of interest to mention at this point that last April we found ourselves in the unusual position of having to dismiss as redundant no less than 24 men out of a total of 125 employed on the works.

Maidstone Works Before Reconstruction

In 1939 the gas output from Maidstone was just under 500 million cu.ft. per annum. This was manufactured mainly in horizontal retorts of which there were 18 settings of eight in three separate benches. Only two benches, each of six settings, were in use and the output from these, together with 500,000 cu.ft. of water gas, was sufficient to meet the Company's maximum daily send-out of approximately 2 million cu.ft. The retort house in 1929 was extended and equipped with a Le Fleuve conveyor (one of the first to be installed in this country) and two Jenkins-de-Brouwer combined charging and discharging machines. In 1939 the works compared favourably in efficiency with others in Southern England and gas had been sold at 9d. per therm for the previous six years. A sound financial policy had been pursued for many years and in 1944 when the decision was made to reconstruct the works, the amount of capital expended stood at the low figure of £372 per million cu.ft. of gas sold per annum.

During the war, in order to meet the rapidly growing demand for gas, an attempt was made to put the third bench of horizontals to work. This bench, however, had laid idle for 10 years, and after a number of retorts had collapsed, permission was obtained from the Ministry of Fuel and Power to start immediately on its reconstruction. Subsequently permission was also obtained to reconstruct a second bench of horizontals, which work is now in progress.

The Reconstructed Retort House

The new installation will eventually consist of 12 settings of Gibbons 18 in. × 24 in. horizontal retorts 24 ft. through. These are, I believe, the largest horizontal retorts yet installed in this country. Five of these settings having a throughput of 100 tons of coal per diem form the bench now at work, the contract for which included the coal and coke handling plant necessary for the whole installation.

Coal Handling

Maidstone Gas-works is situated on the River Medway and coal is delivered alongside in barges of up to 140 tons capacity. Our maximum weekly consumption is 1,200 tons and we can conveniently unload two barges a day if necessary. The retort house is close to the river with its main axis at right-angles to the river bank. Alongside the retort house is a covered coal store with a capacity of 4,000 tons of coal or nearly four weeks' supply. In the past, the handling of coal from barge to retort house was carried out as follows:—

(1) It was unloaded from barge by means of a travelling steam crane and dumped into a four-wheeled bogey on a gantry projecting from the river end of the coal store.
(2) The bogey was then weighed and having negotiated two turntables was pushed by hand across the top of the store along one of five runways.
(3) The coal was discharged from the side of the bogey into the store at any selected point on the runway.
(4) Coal was fed through slides on to a draglink conveyor running in a dark and narrow passage under the coal store floor.
(5) From the conveyor, the coal was delivered into a crusher and elevated by means of a bucket elevator of 15 tons per hour capacity into a hopper above the retort house stage floor.

At least seven men were permanently employed on coaling—*i.e.*:—One crane driver, one barge man, two bogey men, and three elevator men.

The elevator men were shift workers, one on each shift, as the coal hopper in the retort house had a capacity of only 16 tons, which was not even sufficient for one draw. It was, therefore, necessary for a man to be on duty throughout the 24 hours to keep this hopper filled. If, for any reason, there was an interruption of more than two or three days in coal deliveries, additional labour had to be employed on shift work to barrow coal onto the draglink conveyor. Up to four additional men on each shift were employed on this work.

New Coal Storage and Handling Plant

A very great saving in labour has resulted from the installation of continuous overhead coal storage bunkers in the new retort house. These bunkers are divided into bays, one for each setting, each having a capacity of 40 tons, or two days' supply.

A new coal receiving hopper and crusher have been erected between the retort house gable wall and the river. The coal is grabbed from barge by means or the travelling steam crane, dumped into this hopper, and after passing through the crusher, is elevated by bucket elevator to the top of the retort house. The crusher and elevator have a rated capacity of 50 tons per

*Paper to the Southern Association of Gas Engineers and Managers (Eastern District), Feb. 24, 1948.

hour so that to empty one 140-ton barge takes just under three hours.

A feature of this plant is that it is all above ground. The top curb of the receiving hopper is 15 ft. 6 in. above ground level, and although the crane lift is greater than it would be were the crusher and elevator boot accommodated as they so often are in a concrete pit, there is a great advantage to be gained through having the machinery readily accessible, from the points of view of ease of maintenance and safety.

From the top of the elevator the coal is fed direct onto a conventional type of draglink conveyor and is distributed through movable slides into the overhead coal bunkers in the retort house. If, in the future, reasonably regular deliveries of coal can be obtained and when the present acute shortage of barges has been overcome, so that we can keep them alongside for a day or two without paying demurrage, it should be possible for us to take in 75% of our coal through this plant directly into the retort house.

Only two men are required to handle coal in this way, one crane driver and one bargeman. There is thus a saving of five men as compared with the old method.

Coal Store Reclaiming Plant

We have not yet been able to devise a satisfactory method to replace the use of the man-pushed bogey for delivering coal to the covered coal store. As it is hoped that only 25% of our coal will now be handled in this way, it is doubtful whether any such scheme can be justified financially as there is only half a man—*i.e.*, 25% of two men—to be saved. This is, nevertheless, a dirty and unpleasant job—and I wish it could be eliminated. We have, however, recently carried out certain modifications inside the coal store, which will considerably improve the method of reclaiming coal from stock.

The old conveyor trench has been widened and provided with good electric lighting and a new crusher and bucket elevator installed. This elevator will feed coal on to the draglink conveyor over the retort house coal bunkers, which is reversible. The capacity of the elevator is 25 tons per hour so that one elevator man will be able in an eight-hour day to reclaim sufficient coal to supply 10 of the 12 new settings. Three shift workers were previously employed on this work.

The disadvantage of this otherwise admirable store is that only that portion of the coal which lies over the conveyor trench can be reclaimed without further handling. As mentioned above, it was at times necessary to employ up to four men on each shift to barrow coal to the conveyor. The floor of the coal store was very uneven and for the most part was some 3 ft. below the level of the ground outside. This, together with the fact that the openings in the walls of the store were unsuitably placed or too narrow, prevented the use of a mechanical shovel. Last winter, for a period mercifully of only a few hours, we were completely out of coal. There was literally not a lump left in the store. This unprecedented opportunity was too good to miss and we immediately set to work to fill in and concrete the floor and raise it to the level of the ground outside. Suitable openings were also cut in the side walls, and we can now use our mechanical shovel inside the store. In the event of any temporary hold-up in coal deliveries, it is now possible for two men only to stack sufficient coal over the conveyor trench to keep the retort house supplied, work on which it was previously necessary to employ up to twelve shift workers.

Fig. 1.—Guest-Gibbons combined charging and discharging machine.

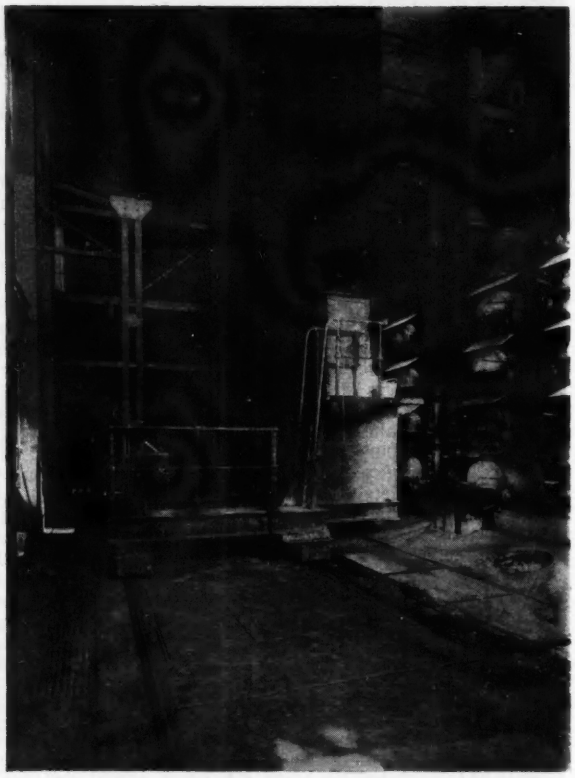


Fig. 2.—Hot coke machine.

Charging Machine

A great deal of thought was given to the choice of the charging machine for our new plant and this problem was again carefully considered when it was decided recently to order a second machine. On both occasions the Guest-Gibbons combined charging-discharging machine was selected in preference to a machine of the projector type.

In my opinion, the modern Guest-Gibbons machine (Fig. 1) is inferior to other types in only one respect, speed of operation. This is a serious disadvantage in large retort houses containing more than 15 settings, in which case two machines would have to be used simultaneously and additional labour would be required on both sides of the house. If every retort in our 12 settings were in operation, it would be possible to complete the two hourly draw in 1¼ hr. using one machine. Thus, if we had a faster machine, we could not save any men although they might have longer in the lobby between draws.

There is something to be said for the slowness of the Guest-Gibbons machine (from the management's point of view) for while a retort is being charged, the stokers have plenty of time for augering, cleaning lids and mouthpieces, limewashing fenders, and generally sweeping up. Such is the attraction of the lobby that with a faster machine, these necessary cleaning operations would very likely be skimped.

The more obvious advantages of the Guest-Gibbons machine are as follows :—

(1) It does not require such a high degree of operating skill as a projector machine. Most of our stokers are now trained machine operators, which simplifies the provision of the reliefs which are necessary with six-shift working and the two weeks' holiday.

(2) Our machine, which is fitted with the "M" head, lays a full and very even charge. It is possible to lay a heavier charge with a projector machine, but on the other hand, if heavy charges are attempted, these are often difficult to discharge and have to be dug out. We do not experience this trouble, as the spear of the machine head ensures that a small space will be left over the top of each charge. Using Durham coal our present charge weight is 20 cwt. laid in six shots.

(3) The Guest-Gibbons is much cleaner in operation than a projector machine.

The main mechanical details of the Guest-Gibbons are well known. Our machine is of massive construction and weighs 20 tons. It has three separate motors for the ram, travelling, and hoisting. Two devices not fitted to earlier models have been incorporated in order to speed up its operation. Both the extension and withdrawal of the trough and the opening and closing of the coal slide at the bottom of the telescope are effected mechanically from the movement of the chain. The average time taken to take in coal, discharge, charge, and travel to the next retort is five minutes.

Hot Coke Machine

An unusually elaborate hot coke machine (Fig. 2) has been installed on the discharging side of the new retort house. This machine is designed for receiving and deflecting the coke discharged from any mouthpiece into the Le Fleuve conveyor trough. Alternatively, coke from the third, fourth, and fifth tier mouthpieces can be discharged directly into the producers. The total weight of the machine is approximately five tons and it is fitted with a 5 m.p.h. electric motor for travelling on a track laid along the whole length of the discharging side floor.

The coke receiver is asbestos lined and effectively insulates the stokers from the heat radiated by the hot coke. The chutes for deflecting coke to the producer are operated by means of levers on the machine and a slot is provided in the receiver for the bar, the use of which is unfortunately necessary when the producers are being filled, in order to clear any blockage of coke in the producer mouth.

The machine also incorporates a manually-operated producer lid lifter, but the makers have themselves suggested that this is a mistake, as it provides too great a temptation to the stokers to replace the producer lid without taking the trouble first to traverse the machine clear of the setting in order to enable them to clean off any coke which has lodged on the lid seating.

Platforms are fitted to the machine to facilitate cleaning the upper mouthpieces and lids and augering the offtakes. We do not, therefore, have to use long and heavy augers and there is a reasonable chance of a torch being used when the lids on the upper tier mouthpieces have to be opened.

When I first saw this machine, I considered that it was rather an extravagant luxury, but I am now convinced that as a result of the good working conditions on this side of the house, our carbonizing results are materially improved. The producers are regularly and properly filled and there can be no excuse for dirty lids and improperly augered offtakes.

Fig. 3.—Coke skip hoist.

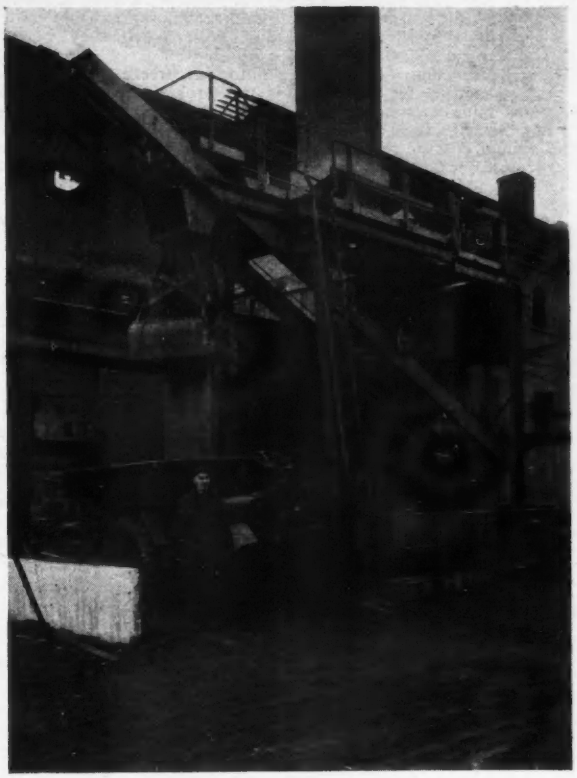


Fig. 4.—Breeze grabbing unit.

Le Fleuve Conveyor

The Le Fleuve conveyor is of conventional design, the trough being formed with heavy cast iron sections, 2 ft. 6 in. internal width, lined with blue Staffordshire tiles. The means by which the coke is separated from the breeze and water at the discharge end of the trough has been greatly improved in comparison with our old Le Fleuve. In the early design, the trough discharged the coke and water on to an inclined drainage conveyor made up of slotted steel plates through which the water and breeze fell into a settling pit below. This conveyor performed its function of draining the coke reasonably well, but the wear and tear on it was very heavy. The new conveyor trough terminates outside the retort house in a reinforced concrete screen chamber containing an inclined static breeze extraction screen comprising four tiers of cast-iron bars of tapered section supported on cast-iron bearing members. The screen chamber is built over a reinforced concrete settling pit which is 17 ft. square and 21 ft. deep, having two compartments. There are thus no moving parts in the new design and it is a simple matter to replace the screening bars when they become worn. This screen has now been in use for fourteen months and as yet no bars have had to be changed. The coke is drained quite as effectively as by the old drainage conveyor.

Coke Skip Hoist

After passing over the static screen, the coke falls into a ground level hopper having a capacity of 40 tons. From this hopper it is elevated to the adjoining coke screening and grading plant by means of a skip hoist of the fully automatic unbalanced type, having a skip capacity of 12 cwt. and an elevating capacity of 15 tons of coke per hour. This hoist replaces the old bucket elevator which is shown still in position in Fig. 3.

There are two great advantages of a skip hoist as compared with a bucket elevator for coke handling.

(a) The coke only comes into contact with the inside of the skip, the lining plates in which are cheap and easy to

replace. In the case of the bucket elevator, it is impossible to prevent wear in all moving parts being caused by the abrasive coke dust with which they become coated.

(b) The bucket elevator is a notorious breeze maker. Coke handled by skip hoist is not broken up to nearly the same extent.

For the last three years, before the installation of the new plant, the annual cost of repairs and maintenance to the drainage conveyor and bucket elevator averaged nearly £500 per annum. It is not yet possible to give comparative figures for the static screen and skip hoist which have replaced them, but even if a new skip is purchased every two years, the total annual cost of repairs on these two items of plant is not likely to exceed £75.

Breeze Grabbing Unit

A breeze grabbing unit (Fig. 4) of very neat design is mounted over the new settling pit. The grab is of the Westwood single chain hand-tripping type of 7/10½ cu.ft. capacity (about 4/5 cwt. of breeze). The hoisting rope passes over a pulley mounted in a block which is free to run up and down an inclined track. When the grab is lowered, the block and grab travel together until the block strikes a fixed stop at the lower end of the track. The grab then drops freely into the pit. When the winch is reversed, the grab is raised from the pit until it meets the block, which then travels with the grab up the inclined track. An intermediate hinged stop is provided on the track so that the grab can be lowered also into the second compartment of the setting pit if required. The inclined track at its upper end projects over a concrete slab on to which a dumper or tipping lorry can be driven to receive the breeze. This grabbing unit has proved extremely useful for on occasions, such as when a purifier is being emptied, it would be most inconvenient to bring the mobile crane round to empty the breeze pit.

Ash Handling

The retort house fireman on many works has to work in appalling conditions. The cellar is dark and invariably damp. Coke and water are liable to fall on him from above and having cleaned his fire, often he has, when in an overheated condition, to push his ash barrow out into the cold. Now that our stokers' lot has been so greatly improved as a result of the installation of scrubber standpipes and new machinery, the fireman has the most arduous job in the retort house. Owing to the depth of the producers (15 ft.) our cellar is lofty and airy in comparison with most others I have seen, but we have nevertheless paid particular attention to the improvement of the fireman's working conditions, for good carbonizing results cannot be achieved if his work, which is difficult to supervise, is not properly done.

We are accordingly, at the present time, installing along the front of the producers an overhead track for a travelling ash skip. A branch of this track leads from the cellar to a pan ash recovery plant which is being erected outside. The skip will require little effort to push along the track and it has been designed so that it can be tipped easily for unloading. The fireman will thus be relieved of the work of barrowing ash from the cellar. This should result in some saving of labour when all the new settings are available, for one man will be able to clinker a large number of fires.

Pan Ash Washing Plant

Recent tests have shown that there is approximately 40% of combustible coke in the ash which is removed from our producers. Attempts to reduce this are liable to end in trouble due to the fires being improperly cleaned. As it is difficult with our existing staff to supervise the firemen adequately, it is better to tolerate the removal of too much coke from the fires than to have them clinkered up. In order to recover as much of this coke as possible, we are now installing a "Columbus" pan ash washer. I estimate that we shall recover at least 500 tons of coke per annum for use on the works which, owing to the present high price of coke, gives a remarkable return for the money spent on the plant.

Power Supply

All the plant to which I have referred, with the exception of the cranes and vehicles, is electrically driven. We take our main supply from the Corporation Electricity Department at 6,600 V. A.C. This is transformed and rectified by means of mercury arc rectifiers to 230 V D.C. The question of using A.C. on the new plant was seriously considered, but it would have meant that our own works gas-engine driven generators could not be used as standby plant in the event of a failure of the main supply and we should have had to have scrapped a number of existing D.C. motors.

We also have a 460 V three-wire D.C. supply from the Corporation, although this is likely to be discontinued within a few years.

At the present time, therefore, we have three alternative sources of supply for every motor on the works.

The price of main electricity is 0.925d. per unit, plus a monthly charge of 10s. per kWh of maximum demand.

In addition to the coal stocked in the coal store, we have space for a further 1,500 tons in the works yard, together with approximately 2,000 tons of coke and breeze. Additional storage space is also available in a field adjoining the works, which was once the Company's cricket ground. For the stacking, reclaiming, loading and transport of this material and also the ash and clinker from the producers, C.W.G. plant, and boilers, we have the following plant and vehicles available :—

One 3-ton Ransome-Rapier mobile crane.
One mechanical shovel.
Two dumpers.
One 3-ton tipping lorry.

Mechanical shovels and dumpers are now commonplace and there is no need for me to emphasize the valuable work which they can perform on any gas-works except those of the smallest size.

The Ransome-Rapier crane is, however, our special pride. It was purchased in 1944 for £2,965 and has since paid for itself several times over. The operating machinery is as fitted to the standard Rapier 423 excavator which allows of two-tope operation of the grab whereby it can be opened or closed at any point during its lift. The jib is 40 ft. long and for coal and coke handling we use a 34/27 cu.ft. capacity grab at a working radius of up to 27 ft. Power is provided by a Perkins P.6 6-cylinder diesel engine developing 57 H.P. and is transmitted through a fluid coupling similar to the well-known fluid flywheel.

This crane was originally purchased mainly to act as a standby to the Grafton steam crane which we use for coaling. At the time the steam crane was badly in need of repair, having completed no less than 34 years' continuous service. The Ransome-Rapier, although fitted with a smaller grab than the Grafton, made up for this by its speedier action and was easily capable of handling 250 tons of coal per day out of barge into the coal store. The Grafton crane was completely overhauled and now seems good for another 30 years' service, but it is comforting to have the second crane to understudy this old warrior.

The Ransome-Rapier crane is now in continuous use in the yard. A selection of the duties it performs is as follows :—

Stacking and reclaiming coal and coke stored in yard and field.
Unloading coke from rail.
Emptying breeze settling tanks.
Charging and discharging purifiers.
Unloading new oxide from barges.
Loading spent oxide into barges.
Loading breeze ash, and clinker into dumper or lorry.
Various lifting jobs.

I shall refer in detail to the charging and discharging of the purifiers later.

As a result of the great use that is made of this crane and the dumpers, there is on Maidstone Works a marked absence of the structural steelwork associated with telphers and belt conveyors which is such a feature of some works no larger than ours. There is not a single belt conveyor on the works and we have even sold our portable conveyor.

We have thus not only saved the capital cost of such plant, but we are relieved also of the considerable annual expenditure required for its mechanical maintenance and painting. In four years repairs and maintenance on the crane have been confined to the renewal of the grab ropes. This year we have purchased a spare track assembly so that we can renew various bushes and pins in the existing tracks without having the crane out of action for more than a few hours. We are also replacing the jib luffing ropes.

The success of this crane has been in a large measure due to the crane driver. Not only is he an artist in its manipulation, but he also takes a real pride in its appearance. He keeps the mechanism in spotless condition and the polished parts of the engine always shine brightly. In his rare spare moments he is often to be seen engaged in painting.

Oxide Handling

Before the war, when we wished to change a purifier, it was our normal practice to obtain additional labour from the Labour Exchange. The men were only too pleased to carry out this work which, being classed as "dirty," carried a higher rate of pay than normal labouring.

We have only one set of purifiers consisting of four cast iron ground level boxes, each 40 ft. square. A gang of 22 men used to take between a fortnight and three weeks to discharge and charge a box, the total oxide content of which is approximately 170 tons. Fortunately the rated capacity of the boxes was, at that time, well above the maximum daily gas output, but it was clearly bad practice to have 25% of the total purification capacity out of action for as long a period as three weeks, during which time it was also impossible to swing the remaining boxes.

During the war, this fact, together with the labour shortage and the rapid rise in sales of gas, combined to bring about a desperate state of affairs when it became necessary to change a purifier in the winter. An attempt was made to speed up both

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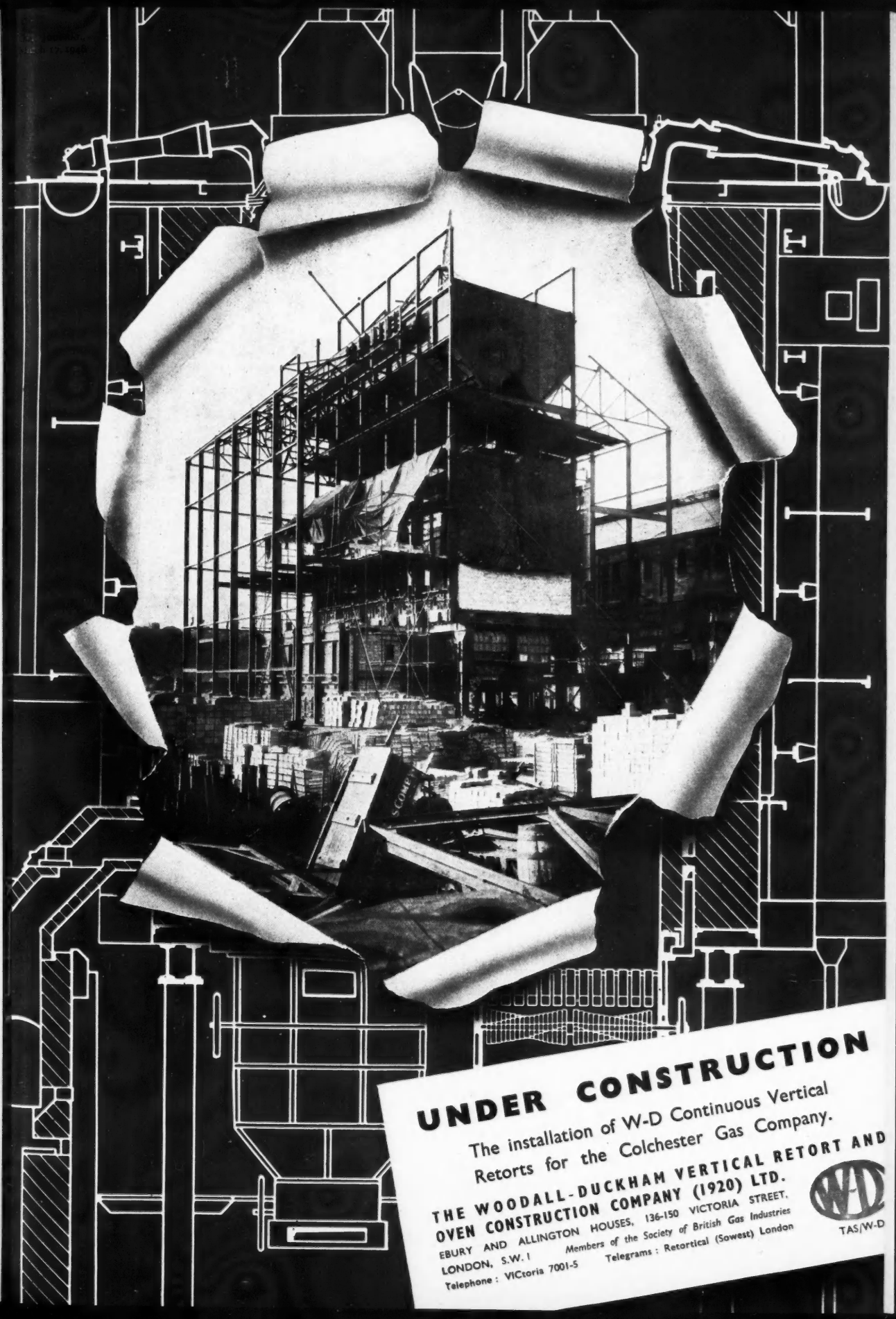

UNDER CONSTRUCTION

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emptying and filling by means of a portable belt conveyor. This, however, was a limited success as our large purifiers are divided into four bays and it was difficult to move the conveyor from one bay to another. Also it is only possible to empty and fill from one side, so that the conveyor had to be over 30 ft. long to handle oxide from the two bays further from the oxide floor.

We have, however, worked out a very satisfactory solution to this difficulty and we should now be able to keep going without undue anxiety until such time as it is possible for us to install a second set of purifiers. The asbestos sheeted roof, which originally covered the oxide floor alongside the purifiers has been removed, split into two sections, and re-erected on two separate sites which were available nearby. This has made it possible to bring the Ransome-Rapier mobile crane on to the concrete slab. This crane, as already mentioned, is provided with an unusually long jib which, when lowered, reached right over the purifiers. A special light two-rope grab of 13/10 cu.ft. capacity (8 cwt. of oxide) is used so that the crane is not overloaded at extreme radius (Fig. 5).

At the present time, our procedure in emptying a purifier is as follows:—On Monday morning we assemble, if possible, 12 labourers who, together with the crane driver, and two dumper drivers, make up a gang of 15 men. Four men work each of three of the four purifier bays, while the crane operates in the fourth. A mobile compressor with four picks is available to help the men break up the oxide. If the weather is favourable

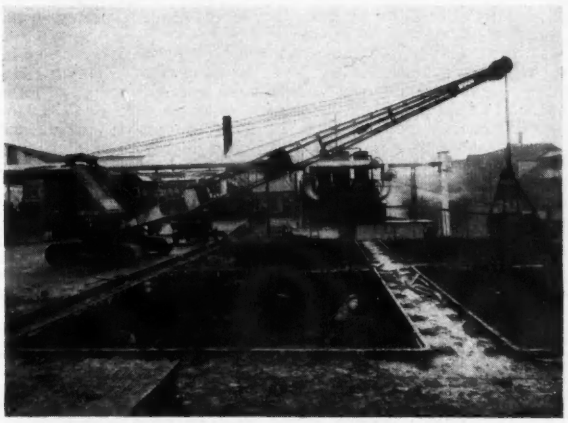


Fig. 5.—Discharging a purifier by means of a 3-ton Ransome-Rapier tractor crane.

a box can be emptied in two and a half days. Filling takes another day and a half, a total of four days or 60 man days.

By the old method, where spent oxide had to be thrown up from the boxes into wheelbarrows, to empty and fill one of these purifiers took over 200 man days under the most favourable conditions. As the cost of a man/day on this work is now approximately £1, the saving which has resulted from the use of the crane in place of barrows amounts to no less than £140 per box, or, as we normally change six boxes a year, £840 per annum. The actual saving may well be considerably greater than this, for if we had no suitable crane, we should, at the present time, have to keep a larger number of men permanently on our books so as to ensure that sufficient labour was available to change a box when the need arose.

No doubt the thought will already have occurred to many of you that our past difficulties have been due to our being afflicted with purifier boxes at ground level. It is true that if our purifiers were built above ground with bottom discharge and an oxide floor above we should have no difficulty in changing a box well inside the normal working week with the number of men we now employ on this work. There would also be an advantage in that the work could be carried out regardless of the weather. We have fortunately plenty of room on the works, so considerations of space do not arise, and now that we have overcome the difficulty of emptying ground-level boxes, there are significant advantages to be gained from their installation. Technically they are more efficient as the boxes are kept warmer, but, more important than this, an installation of four 40 ft. square overhead purifiers complete with overhead revivifying floor and oxide elevator would at the present time cost at least £10,000 more than similar boxes at ground level. Taking interest and amortization charges at 7% on this figure, the extra annual cost of overhead purifiers amounts to £700 per annum, or £117 per box changed if this operation is carried out at nine-monthly intervals.

I doubt whether we could charge and discharge an overhead box in less than two days with a gang of 15 men, in which case the saving in wages as compared with our present methods would amount to only £30 per box.

Unfortunately, oxide handling is not only confined to charging and discharging boxes, and we now have to employ manual labour to feed the breaker, turn oxide on the revivifying floor, and prepare fresh oxide for charging in the next box to be changed. We have a number of elderly employees who seem content to perform this work, but it is our experience that if any younger man who applies to us for a job is put straight on to oxide turning, he will almost certainly leave again within two days. Also men who in the winter are employed on shift work in the retort house will not accept work of this kind in the summer, as they can so easily obtain better paid and far pleasanter jobs elsewhere.

It is clearly becoming daily more urgent to find a solution to this problem of oxide handling, and we are considering the adoption of the following measures, the success of which, however, has yet to be proved. We have asked Messrs. Gibbons Bros. to construct a special type of mobile oxide breaker for us. This will consist of one of their "Vernon" breakers mounted together with a suitable feed hopper on a steel framework sufficiently high above the ground to allow a dumper or tipping lorry to be run underneath to receive the disintegrated oxide. The framework will be fitted with wheels so that it can be moved adjacent to the box which is being emptied. The breaker will be fed by the mobile crane with oxide either straight out of the box or from the slab. The oxide can then be dumped in the revivification shed.

There still remains the problem of turning and mixing. Only recently, however, I have heard of a machine resembling a one man motor driven plough, which is being used by the Barnet District Gas and Water Company with great success. I hope that we may hear something of this in the discussion on this paper, for it sounds a most promising development.

Once we have found a satisfactory solution to the problems connected with oxide handling, we shall have approached very close indeed to the ideal towards which we are striving, the complete elimination of the shovel and barrow. We shall still somehow have to find at least 10 labourers whenever we wish to empty a purifier.

I must admit that we have so cut down the number of miscellaneous labourers on the works that we now find the utmost difficulty in raising a gang for this exceedingly unattractive job. In this connexion, Mr. Oldfield, M.P. for the Gorton Division of Manchester, and a past Chairman of the Manchester Gas Committee, in his speech in Parliament in support of the Second Reading of the Gas Bill, made a very pertinent comment. He said "I remember seeing a purifying box emptied. . . I stood beside the purifying box and 12 men were working in it, and I could not see one of them. I turned to some engineers who had taken me to the box and said to them 'If you, with your intelligence and brains cannot develop a different method of purification, I would not pay you in washers.'"[3] He then went on to describe the "Manchester" liquid purification plant and suggested that the Minister should "consider having similar plants elsewhere."

I earnestly hope it will soon be practicable to use similar plants elsewhere, otherwise it looks as though we shall have to employ 10 men for 52 weeks in the year to do six weeks' work. I should like respectively to suggest to Dr. Hollings that so far as the engineers in charge of medium sized and even small gas-works are concerned, the most useful service which his research workers could render to us at the present time would be the quickest possible development of a satisfactory liquid purification process.

Acknowledgments

I should like to make it clear that I was in no way responsible for the planning of the works reconstruction or for the instigation of the methods of handling materials in the yard and the charging and discharging of purifiers which I have described. Any credit belongs to Mr. W. A. Howie, and my thanks are due to him for leaving me so fine an inheritance.

In conclusion, I should like to express my thanks to the Chairman and Board of Directors of the South Eastern Gas Corporation for permission to present this paper and also to my Technical Assistant, Mr. F. H. Ware, for his valuable assistance in its preparation.

REFERENCES

(1) Muir Wilson. Carbonization in Horizontal Retorts. "GAS JOURNAL," Sept. 10, 1947, p. 560.
(2) Meade. The New Modern Gas-works Practice. Vol. I, p. 282.
(3) House of Commons Official Report, Feb. 11, 1948, Vol. 447, c. 422.

On the Ground of Exceptional Hardship, the West Yorkshire Gas Distribution Company has claimed a revision of the price of gas supplied to Bradford under agreement. The Bradford Gas Committee suggests that this and a Bradford claim for damages should be referred to the Ministry of Fuel and Power for determination.

COMPANY MEETING

CAMBRIDGE UNIVERSITY AND TOWN GAS LIGHT COMPANY

THE Ordinary General Meeting of the Cambridge University and Town Gas Light Company was held at the Company's offices, Cambridge, on Feb. 27, Mr. J. F. Cameron, Chairman, presiding.

The CHAIRMAN, in moving the adoption of the Report and Accounts said: The make of gas for the year reached the highest in the Company's history so far—1,411 million cu.ft. This represents an increase of 1.6% over the previous year. You will recall that January and February brought a long spell of the severest weather we have experienced for many years, and this, together with the serious shortage of solid fuel, created unprecedented demands for gas. New records for maximum hourly and daily consumptions were established almost daily during that period. The highest daily output reached was 6¼ million cu.ft. The large increases in gas consumption during those winter months were offset by much reduced outputs during the very warm summer when some of the lowest daily consumptions of recent years were experienced, and the comparatively mild weather in November and December had a similar effect.

In number as well as in value the appliances of all kinds fitted during the year made a new record. As would be expected, with the scarcity of solid fuel, the number of space heaters and water heaters fitted is considerably in advance of the figures for pre-war years. The number of cookers fitted has also increased considerably and the figure is held back only by shortage of supplies. Our experience continues to prove that where the consumer has a free choice, four out of every five prefer gas for cooking. Large scale cooking equipment continues to be extended and during the year Christ's College kitchen has been completely refitted with the latest type of all-gas cooking and water heating equipment. Some of the larger jobs have been retarded because of the shortage of equipment and of gas piping which is in particularly short supply.

The general coke shortage has hit East Anglia particularly hard because it is not a coke producing area, and the supplies which are normally received from the coke oven plants in the Midlands have been unobtainable because they have been diverted to the steel industry. Fortunately, the better coal position is now enabling us to release more coke for sale, but the strictest economy in its use is still imperative. Changes in fuel policy and in the conditions of employment of labour, together with increases in the pithead price of coal and higher railway rates have increased working costs to a serious extent.

In 1945 the Company embarked on a five-year plan of mains extensions and improvements in order to provide adequate pressures throughout our area at all times. Progress has been sufficiently accelerated to hold out some promise that the programme may be completed within four years from the commencement. During 1947 gas has been taken to the village of Hauxton for the first time by extension of the mains from Shelford. Requests have also been received for supplies to two additional parishes, Coton and Teversham, and Ministerial approval of these projects is now awaited. The total length of new mains laid during the year amounted to 4 miles 875 yds., varying in size from 14 in. to 4 in. diameter, including mains to the new Housing Estates at Walpole Road, Green Park and Pepys Way. The transfer of the entire Distribution Department from Head Office premises to a new Distribution Centre at the gas-works, was effected during the last three weeks of 1947 and already there is ample evidence that the result will be more efficient and effective working of that Department.

Continuous reading of meters, commenced late in 1946, has now completed one annual cycle. In parallel with continuous meter reading, mechanization of the Accounting Department has proceeded during the year and accounts for gas, coke and fittings are now all prepared by mechanically-operated machines, simplifying the work in the Department and providing statistical information which is very valuable in the conduct of the Company's business.

The Bill for the nationalization of the Gas Industry provides for the division of Great Britain into 12 areas, each of which will operate under an Area Board subject to the control of the Minister in consultation with a Central Gas Council. This amount of decentralization suits the Gas Industry better than would administration in a single national unit, and indeed the tendency of recent years, though restrained by legislative restrictions, has been towards extended areas and the co-operation or amalgamation of neighbouring units.

Under nationalization existing undertakings will lose their identity and their individual characteristics, and this seems to me to be a matter of regret, more especally when a Company is tied up as we are in Cambridge with local life and conditions. Our Company consists of 827 stockholders, of whom 178 are co-partners and 649 other stockholders. The stock is locally held to the extent of 70% and it will show how the value of stock held is distributed when I say that 43% of the holdings are of the nominal value of £100 or less, and 75% of the nominal value of £300 or less. We are not a body of financial magnates, but each is interested, in his own way, co-partners with the others, in the compensation he is to receive for his holding. He will receive for each £100 of 7% "B" Stock new stock of the value of £143⅜ bearing interest, so far as one can tell, of 3%. That is to say, instead of an income of £7 he will receive £4 6s. 2d; for each £1 of present income he will receive 12s. 4d. This is not a pleasant prospect and it is not as if we were in a speculative business. Nothing could surpass the regularity with which, year in year out, we have paid the permitted dividends. For 1945, for which the London price of 143⅜ is taken, actual transactions as shown by our books varied from 145 to 164. As other companies similarly situated are probably similarly affected, I hope that the matter may receive attention. With regard to the winding up of co-partnership schemes the Bill is not definite as to the amount of compensation to a man on his ceasing to be eligible for future co-partnership benefits during the remainder of his service. The Bill may, of course, be amended in the committee stage and in this particular I hope that it will be altered.

Until the vesting day comes we will, of course, carry on as far as possible with business as usual, knowing that when that day comes we shall hand over a first class going concern on terms beneficial to the purchaser. I think it probable that we shall have another general meeting such as this before that vesting day comes and that may be the occasion for saying something as to the services which in war as in peace the gas industry has rendered to the community.

The changing circumstances—and the changes were sometimes rapid—to which I have referred have laid an even heavier load than usual on the administrative staff of this Company and it is a pleasure to record that Mr. Hunter Rioch, his administrative staff, and all who work under him and for us, deserve our sincere thanks for their continued assiduous attention to the affairs of the Company.

The Report and Accounts were adopted, and dividends were declared for the half year ended Dec. 31 at the rate of 5% on the Original stock, 3½% on the "B" stock and 2½% on the "C" stock, less tax.

Mr. W H Wosencroft, a member of the staff, thanked the Directors for their support of the co-partnership scheme in the past and spoke of the benefits that employees had derived from it. Apart from regular dividends, many of them had been enabled to buy their own houses and achieve a degree of independence that was the ambition of every man.

THE CHAIRMAN SAID—

Mr. **Frank H. Jones**, at the annual meeting of the Commercial Gas Company (one of the worst victims of enemy action during the war):

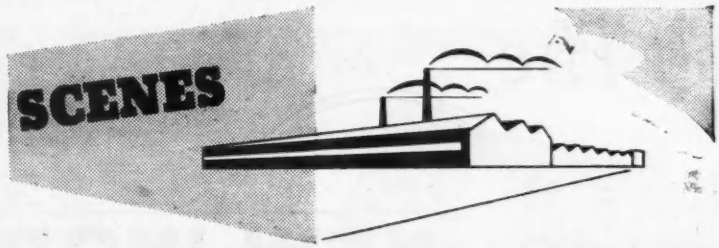
For the last four years it has been necessary for me, in this my annual review, to refer to the financial difficulties with which the Company had to contend during the war and the protracted negotiations with the Ministry of Fuel and Power aimed at effecting some mitigation of the war-time revenue losses. I am now happy to be able to tell you that these negotiations have been brought to what the Board regard as a satisfactory conclusion by the Ministry agreeing to waive the repayment of their loan to the Company of £241,000 and all interest charges. This loan was made up of two parts—£203,000 being attributable to revenue deficiencies and £38,000 to meeting part of the cost of gas lost owing to enemy action. The Ministry will quite properly deduct this latter amount from the company's war damage claim and we are thus left with £203,000 as a contribution towards liquidating the net revenue deficiency suspense account representing the war-time accumulation of revenue losses and interest payments which amounted to £435,902 at the end of 1946.

* * *

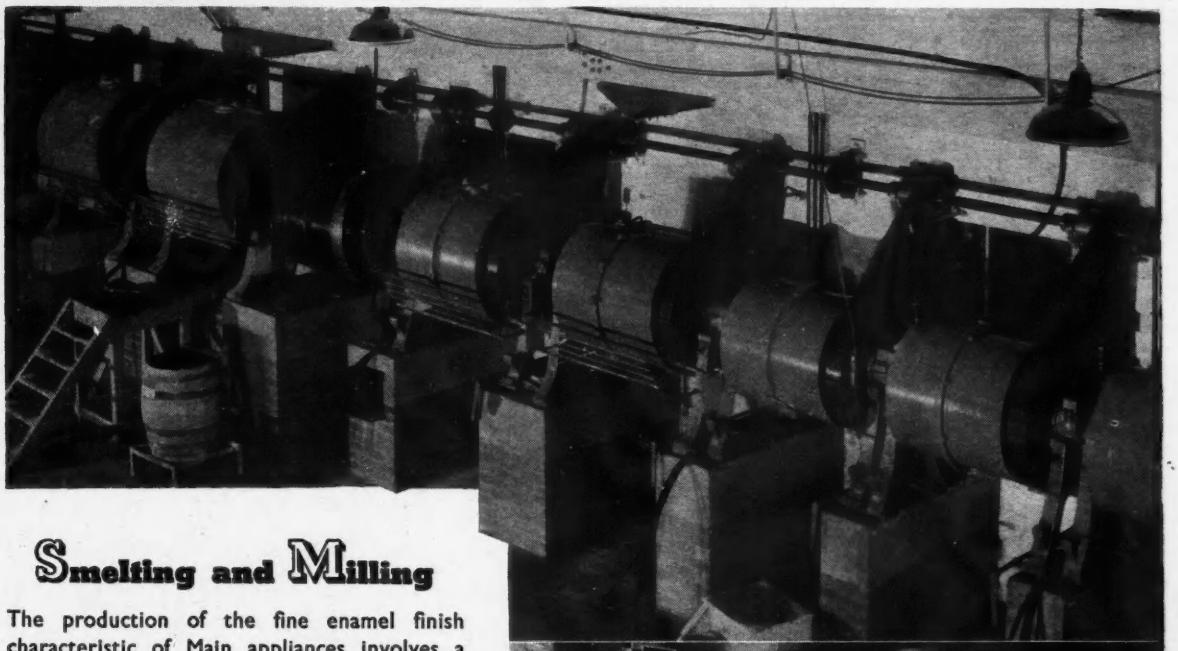
Mr. **E. T. Mahony**, Cork Gas Consumers' Company:

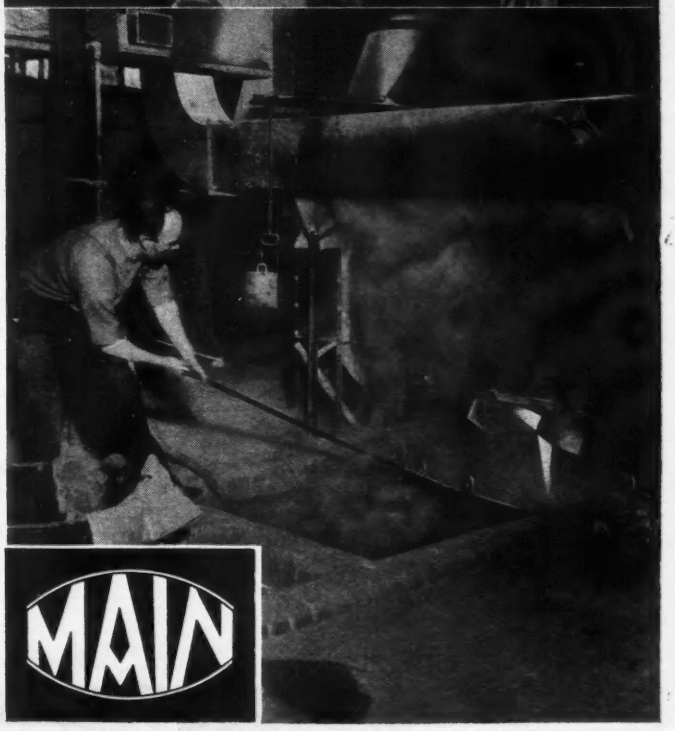
The turning point in our affairs came when American coal began to arrive in the summer. With very little delay we were able to resume the 24-hour service and to improve the quality of the gas to a more or less satisfactory standard. We still have further to go in this direction, but it is satisfactory to note that the level of gas delivered is now up to the pre-war figure. Turning to the prospects for the current year, I am glad to say that the fuel situation is much more favourable than it was 12 months ago. English coal is now beginning to arrive, and we hope that within the next few months we shall have used up our stock of American and British reject coals. When that stage is reached,

BEHIND THE SCENES



IN THE MANUFACTURE OF MODERN GAS APPLIANCES





Smelting and Milling

The production of the fine enamel finish characteristic of Main appliances involves a series of interesting operations. First, the powdered ingredients are weighed, carefully mixed together according to the type of enamel required, and put into the smelting retort. Here they are subjected to a temperature between 1,050° C. and 1,100° C. which reduces the powders to a molten mass. When this has reached the desired temperature and viscosity, the retort is revolved and the contents poured into a trough of water, which causes the "metal" to disintegrate and produce what is known as "frit." This is carefully dried, inspected and weighed and oxides are added according to the colour required. It is now ready for the "milling" process in rotary drums half filled with stone grinding balls. The "frit" is mixed with water and is ground for 8 to 10 hours until it is reduced to a smooth suspension of enamel ready for application to the various parts of gas appliances requiring this particular finish.

The upper illustration shows rotary grinding mills, the lower, white-hot "metal" being poured from the smelting retort.

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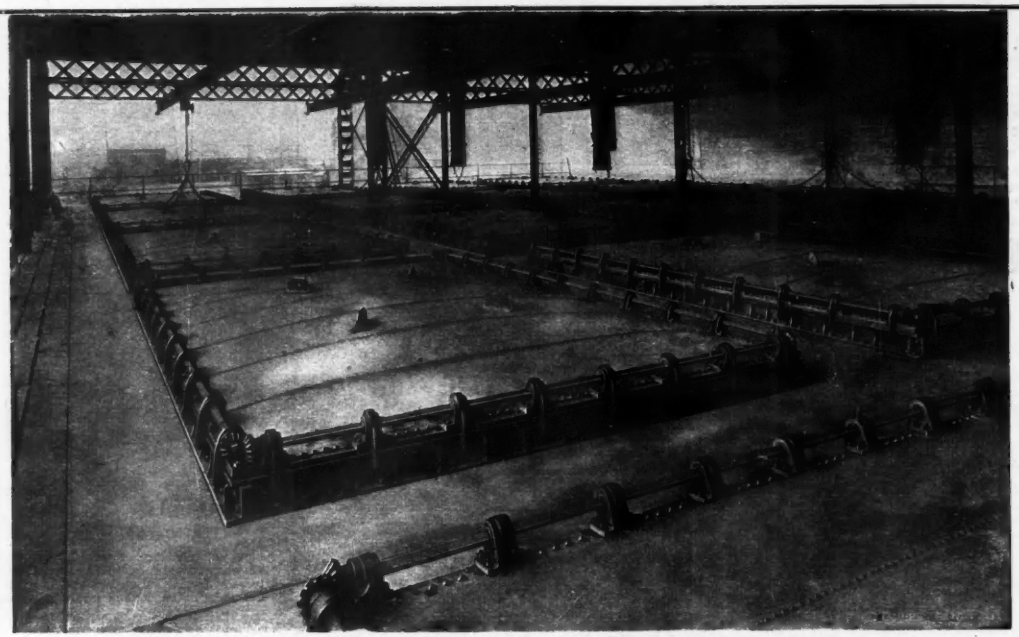

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we should be able to bring the calorific value up to the pre-war standard and to reduce the price of gas, thereby playing our part in reducing the present high cost of living. Before this can be done, however, there must be a considerable downward re-adjustment in the landed price of good British coal, which costs nearly five times as much to-day as it did in 1939. Taking the long view, however, conditions show a cumulative improvement, and for the first time since before the war I think we can look forward to the future with a considerable degree of confidence.

* * *

Mr. **G. H. Boucher,** Bristol Gas Company:

"Bristol is included in the South Western Area Board, which comprises Cornwall, Devon, Dorset, Gloucestershire, Somerset, Wiltshire, and parts of Berkshire, Hampshire, Herefordshire, Oxfordshire, Warwickshire and Worcestershire. I sincerely trust that the vast organization to be set up under this new Bill will give the consumer the right and privilege of getting into touch with the particular branch of the Area Gas Board which has attended to his or her particular personal requirements in the home and the factory for very many years. If the efficient consumer service which has been given under private enterprise is not maintained, the future for the consumer of gas is indeed gloomy. As a Company we have taken the most energetic steps possible to oppose nationalization because we have felt that it will be of no benefit to anyone, either stockholder or consumer. So far as stockholders are concerned undoubtedly they will suffer a serious drop in income and possibly of capital. So far as consumers are concerned experience in other nationalized industries has shown that not only have they received no benefit but they are paying considerably more for the product they require than was the case in private enterprise. My own view is that under nationalization the price of gas will be increased and that so far as administration is concerned they will get nothing like so good a service as I am glad to say we have been able to render for many years past. Instead of the human and courteous manner which has been part of the administration of the Bristol Gas Company they will be met by the soulless attitude which seems inherent in the Civil Service make up."

Now Available from the Institution of Gas Engineers and the Gas Research Board respectively are the grey editions of the 24th Report of the Gas Education Committee (Comm. No. 322/140) and the 46th Report of the Joint Research Committee of the Gas Research Board and the University of Leeds (First Report on Radiant Heating; G.R.B. 15/5), price 2s. 6d. per copy, post free.

GAS UNDERTAKINGS' RESULTS

Tottenham and District Gas Company.—At the annual meeting on Mar. 23 the Directors will recommend dividends at standard rates on the 5% and 5½% Preference stocks and a final dividend of 2½% actual, less tax, making 5% for the year, on the Ordinary stock.

Swansea Gas Light Company.—Gas sales in 1947 were a record in the history of the Company, notwithstanding reductions in industrial gas sales. Revenue account shows a gross revenue of £311,254, including £229,092 from gas sales, against £225,734, and £64,913 from residual products against £64,027. Manufacturing costs were £198,002 against £195,879, distribution £37,713 against £29,379, and management £14,136 against £12,640. A balance of £41,202 is carried to profit and loss account, compared with £47,354 last year. Payment of a dividend of 4½% leaves a balance of £10,416 to be carried forward, against £15,913 brought in from 1946. As a consequence of rising prices of materials and labour, the price of gas was increased for the first time since December, 1940. The Directors' report says that as far as difficulties of manpower and materials have permitted the works, plant, and mains of the Company have been well maintained. In consequence of the development of the Fforestfach Trading Estate and of new housing estates there has been a considerable extension of the Company's mains.

Wisbech Lighting Company.—Mr. G. S. Gardiner presided at the half-yearly meeting, and said that the balance sheet and report were satisfactory, although the Company had been unable to obtain the new equipment necessary to meet the continual big increase in the demand for gas. It was hoped during the present year, however, to extend the retorts to relieve the strain on the present plant and also to replace the coke plant. Expenses during the past half-year had increased by just over £1,000, but against this there was an increase of £900 in sales of gas. There had also been a corresponding increase in the sale of residuals and fittings, with the result that after placing £368 to the renewal fund, the balance was increased by nearly £800. With the balance on account unappropriated, last June, this had enabled the transfer of £2,000 of the profits to the deferred renewals account, bringing the total to £20,000. The net profit for the half year was £3,602, and it was agreed to pay the following dividends: On Preference shares 6%, less tax; on Ordinary stock £3 certificates 13%; on Ordinary £5 shares 12%.

Farnham Gas and Electricity Company.—Sales of 2,287,981 therms of gas in 1947 yielded £132,993 towards a total gas revenue of £213,976, from which a balance of £22,544 was carried to profit and loss account. Payment of a dividend of 6%, less tax, leaves a balance of £19,848 to be carried forward against £16,718 brought in from the previous year. The Directors in their report point out that under the provisions of the Electricity Act, 1947, the Company's electricity undertaking will vest in the Southern Area Board of the British Electricity Authority on April 1, and they assure the proprietors that they will take steps to ensure that the best possible terms of compensation are secured for the loss of this portion of the Company's assets.

GAS PRODUCTS PRICES

Mar. 13

London.—There are no changes to report in the prices of Coal Tar products.

Provinces.—Average prices for gas-works products this week are: Pitch, 100s. per ton; toluole, naked, North, 90's, 2s. 4d. to 2s. 6¾d. per gall.; pure, 3s. 2¼d. Prices for carbolic acid 60's anthracene, creosote oil (hydrogenation), coal tar oils (timber preservation, &c.), and strained anthracene oil are controlled by Government Orders. Prices for road tar are increased by one penny per gall. by S. R. & O., 1947, 177.

Scotland.—Production is well maintained but demand is insatiable.

Refined tar.* Yield to the distiller is 6d. per gall. ex works, naked. Creosote oil. Timber preserving quality,* 5½d. to 6½d. per gall.; hydrogenation oil,* 5⅞d. per gall.; low gravity or virgin oil,† 7¼d. to 7½d. per gall.; benzole absorbing oil, 6½d. to 8d. per gall. Refined cresylic acid is 3s. 6d. to 4s. 6d. per gall. ex works, naked, according to quality. Crude naphtha,† 8d. to 10d. per gall. Solvent naphtha.* Basic maximum prices delivered in bulk, 90/160 grade 2s. 10d. per gall. and 90/190 heavy naphtha, unrectified, 2s. 0½d. per gall.; rectified, 2s. 4d. per gall. Pyridine,† 90/160 grade 15s. per gall., and 90/140 grade 17s. per gall.

* Price controlled. † Uncontrolled.

From the Automatic Gas Control Company (Sales Office, 18, Rupert Street, London, W.1) we have received a booklet in which high claims are made for the saving in gas following the installation of their automatic gas control.

GAS STOCKS AND SHARES

After a dull beginning, last week showed an increase of 1,726 in the number of dealings on the London Stock Exchange compared with the previous week, with British funds 0.47 points down and the industrial ordinary average 0.6 points up on the week. The eagerly awaited Economic Survey, 1948—Sir Stafford Cripps' national household budget—had little effect on the stock markets, and the proposals of the Federation of British Industries and the other employers' organizations on prices and profits, published on Friday, still await Government acceptance or amendment.

Early in the week the official compensation values of 129 electricity securities which are to be replaced on April 1 by British Electricity Stock were published, and prices were marked somewhat higher in anticipation of dealings being on an ex-dividend basis and free of stamp duty. For the rest of the week discounts on compensation values ranged from 2¾ to 2%. Some activity in the shares of colliery companies with coking subsidiary interests was attributed to overtures by the National Coal Board to the companies concerned.

Dealings in gas securities were round about the average during the week, and most price movements, though small, were in favour of holders. Imperial Continental gained one point on the week, and Primitiva Holdings fell 6d. The week's rises and falls were as follows:

OFFICIAL LIST

Associated G. & W., ord. ...	21/6—23/6	+ 6d.
Do. deferred ...	22/ —24/	+ 6d.
Bournemouth, std. 5 p.c. sliding scale (xd. Mar. 10)	156 —166	— 1
Do. 7 p.c. max. (xd. Mar. 10)	151 —156	— 1
Brighton, &c., 5 p.c. std. cons.	101 —106	+ 1
Bristol, gen. cap. 5 p.c. max. ...	111 —116	+ 1
British Gas Light, ord. (xd. Mar. 10)	124 —129	— 1
Do. 4 p.c. red. deb. ...	92 — 97	+ 1
Cheltenham, 5 p.c. basic cons. ord. (xd. Mar. 10)	99 —104	+ 1
Chester United, ord.	105 —110	+ 2
Croydon, max. div.	101 —106	+ 1
Gas Light & Coke, 4 p.c. cons. pref.	97 —102	+ 1
Do. 3½ p.c. red. deb. (xd. Mar. 10)	92 — 97	— 1
Gloucester, cons. ord. (xd. Mar. 10)	92 — 97	+ 2
Imperial Continental, cap. ...	117 —122	+ 1
Oxford, cons. ord.	195 —205	+ 5
Primitiva Holdings, ord.	10/6— 12/6	— 6d.
South Metropolitan, 6 p.c. irred. pref.	122 —127	+ 2
Tunbridge Wells 4 p.c., sliding ...	123 —128	+ 3
United Kingdom, 3½ p.c. red. deb. (xd. Mar. 10)	92 — 97	— 1

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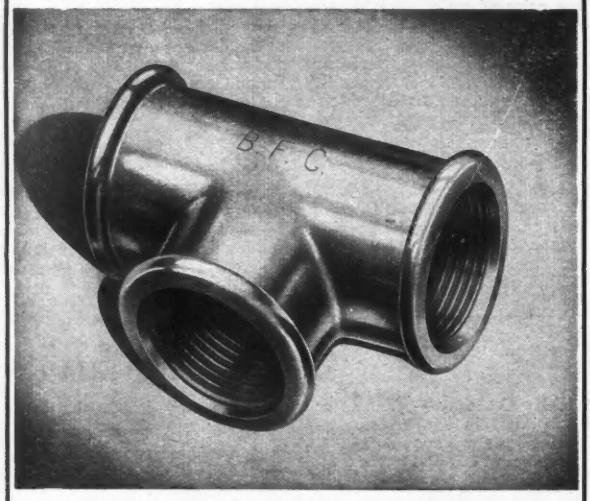

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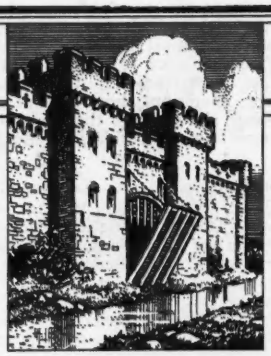

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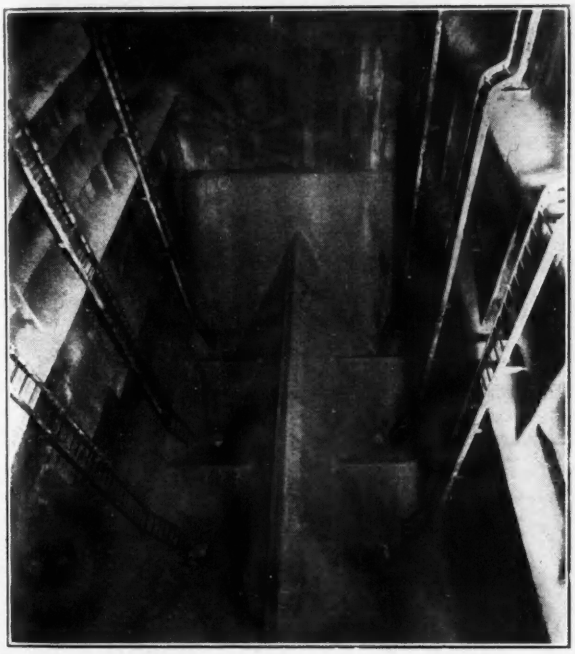

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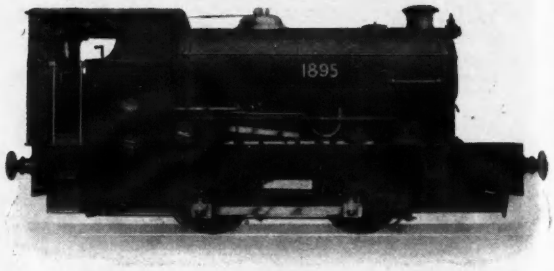

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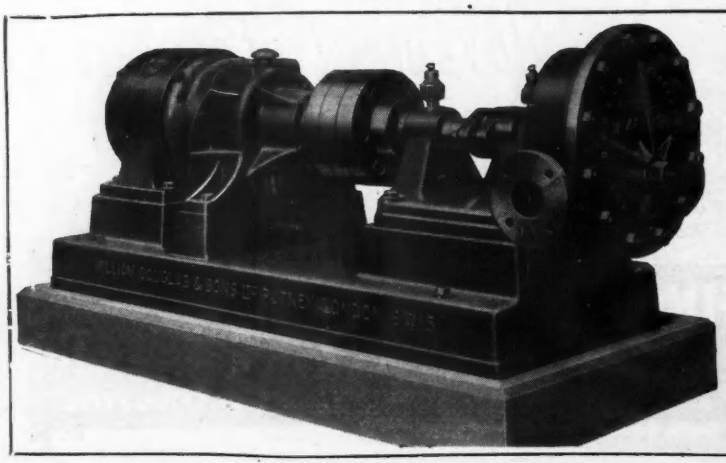

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(1)

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Subscription Rates: Home and Empire: 45/- per annum; Foreign: 52/- per annum. (Both payable in advance.) A copy of the "Gas Journal" Calendar & Directory is presented each year to continuous subscribers.

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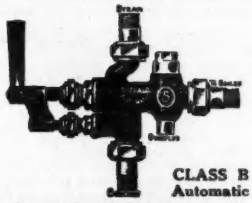

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COMPANY NOTICE

BRITISH GAS LIGHT COMPANY, LIMITED

NOTICE IS HEREBY GIVEN that the TWO HUNDRED AND SEVENTEENTH ORDINARY GENERAL MEETING of the Company will be held at the Chief Office, 2, The Abbey Garden, Westminster, S.W.1, on WEDNESDAY, the 24th March, 1948, at 12.30 p.m. precisely, to receive the Report of the Directors and the Statement of Accounts for the year ended 31st December, 1947; to confirm the payment of the Dividends on the Preference Stocks and to confirm the Interim Dividend and declare a Final Dividend on the Ordinary Stock; also to elect two Directors, to appoint Auditors and fix their remuneration, and deal with any business that may be legally transacted at an Ordinary General Meeting.

The Transfer Books are closed from the 10th to the 24th March, 1948.

By Order of the Court of Directors,
F. T. BROOKES,
Secretary.

2, The Abbey Garden,
Westminster, S.W.1.
15th March, 1948.

PLANT FOR SALE & WANTED

OFFERS invited for approximately 100 STREET GAS LANTERNS. For details apply SURVEYOR, U.D.C. Offices, 35, Fore Street, Wellington, Som.

ENCLOSED RECTANGULAR TANKS, 2,700 gal. Three-inch electric CENTRIFUGAL PUMP, 230/1/50. Three-throw Evans ELECTRIC PUMP, 4 in. by 6 in., 415/3/50. Unused CALORIFIER, 27 in. by 15 in. by 15 in. Diesel LOCOMOTIVE, 24 in. gauge, 20 h.p. AIR RECEIVER, 6 ft. 7 in. by 2 ft. 6 in., 60 lb.
HARRY H. GARDAM & Co., LTD., Staines. Phone 98.

STOURBRIDGE AND DISTRICT WATER BOARD

THE above Board has for immediate disposal, a GAS ENGINE in working order of 114 B.H.P. Offers to include for complete dismantling and removal from site should be delivered to the undersigned on or before April 30, 1948.

J. SEPTIMUS BROWN.
Engineer and Manager.
7, Lower High Street
Stourbridge.

TANKS FOR SALE.

CLOSED CYLINDRICAL.
Twelve off 30 ft. by 7 ft. One off 37 ft. by 5 ft. One off 30 ft. by 5 ft. Two off 13 ft. by 5 ft. One off 28 ft. by 7 ft. 6 in. One off 30 ft. by 5 ft. 6 in. Two off 10 ft. by 6 ft. 9 in. One off 4 ft. 10 in. by 3 ft. 3 in.
OPEN CYLINDRICAL.
One off 10 ft. by 8 ft.
CLOSED RECTANGULAR.
One off 25 ft. by 9 ft. 6 in. by 5 ft. Two off 12 ft. by 5 ft. 6 in. by 3 ft. One off 6 ft. 6 in. by 2 ft. by 2 ft. Five off 14 ft. 6 in. by 7 ft. by 9 ft. Two off 6 ft. 9 in. by 4 ft. by 3 ft. Two off 5 ft. 6 in. by 2 ft. by 2 ft.
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Fifty off 6 ft. 6 in. by 4 ft. 2 in. by 4 ft. 7 in.
LORRY MOUNTING.
Two off 20 ft. by 8 ft. by 5 ft. 2 in. (eight compartment). One off 14 ft. 6 in. by 6 ft. by 3 ft. 10 in. (four compartment).
Also a large selection of smaller sizes.
JAMES N. CONNELL, Phoenix and Clifton Works, Coatbridge, Scotland. Phone Coatbridge 1121 (5 lines.)

CONTRACTS OPEN

COUNTY BOROUGH OF DARLINGTON
(GAS DEPARTMENT.)
CARBURETTED WATER GAS PLANT.

TENDERS are invited for the supply, delivery and installation at the Corporation's Gas-works, Darlington, of:—
(*a*) 3,000,000 cu. ft. per day FULLY AUTOMATIC CARBURETTED WATER GAS PLANT, complete with Waste Heat Boiler, Water Cooled Condenser, Coke Handling Plant and Building.
(*b*) WATER COOLING AND CIRCULATING PLANT to operate in conjunction with the above.

Further particulars, Specification, General Conditions of Contract and Form of Tender may be obtained from F. Wilson, A.M.Inst.Gas E., Engineer and Manager, Gas-works, John Street, Darlington.

Tenders, in plain sealed envelopes endorsed "C.W.G. Plant, Gas-works," to be delivered to the Town Clerk, 11, Houndgate, Darlington, not later than 9 a.m. on April 15, 1948.

The Corporation do not bind themselves to accept the lowest or any tender.

SPENBOROUGH URBAN DISTRICT COUNCIL
(GAS DEPARTMENT.)
TO MAINLAYING CONTRACTORS.

TENDERS are invited from Contractors for EXCAVATING, LAYING, JOINTING, TESTING, FILLING-IN, DISPOSAL OF SURPLUS AND TEMPORARY ROAD REINSTATEMENT WORK in connexion with the undermentioned Mainlaying Schemes:—
(*a*) 1,814 lineal yards of 12 in. bore SPUN-IRON TRUNK GAS MAIN AND SPECIALS in Whitehall Road, Hunsworth-Birkenshaw.
(*b*) 420 lineal yards of 15 in. bore SPUN-IRON TRUNK GAS MAIN AND SPECIALS in Huddersfield Road, Liversedge.

The 12 in. and 15 in. gas mains, specials and joints will be supplied by the Council.

Specifications, with bills of quantities and tender forms, can be obtained from the office of the Gas Engineer, Mr. Arthur L. Jennings, M.Inst.Gas E., Gas-works, Cleckheaton, where the relative plans may be seen by appointment.

Tenders, in envelopes sealed and endorsed "Gas Department Mainlaying," and bearing no name or mark to indicate the senders, must be delivered to the nder-signed not later than Wednesday, March 31, 1948.

D. COUPE,
Clerk of the Council.
Town Hall,
Cleckheaton.
March 4, 1948.

TREDEGAR URBAN DISTRICT COUNCIL
(GAS DEPARTMENT.)

THE above Council invite tenders for:

1. Supply and delivery of 8 in. CAST IRON MAINS AND CONNEXIONS with mechanical joints.
2. Supply and delivery of 12 in. CAST IRON MAINS AND CONNEXIONS with mechanical joints.
3. Supply and installation of a BOOSTING PLANT.

Full particulars of the Council's requirements can be obtained from Mr. S. L. Filer, M.Inst.F., Engineer and Manager, Gas Department, Poplar Road, Tredegar, Mon.

Tenders should state the period required for delivery.

The Council do not bind themselves to accept the lowest or any tender.

Tenders, in sealed envelopes (which shall not bear any name or mark indicating the sender) and endorsed "Booster" and/or "Gas Mains," must reach the undersigned not later than noon on Saturday, April 10, 1948.

OLIVER LLEWELLYN,
Clerk of the Council.
Bedwellty House,
Tredegar, Mon.
March 11, 1948.

APPOINTMENTS VACANT

None of the vacancies in these columns relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he or she is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

WELLS GAS COMPANY

THE applicants for the position of FITTER advertised are THANKED. The position HAS NOW BEEN FILLED.

C. DUNN,
Secretary and Manager.

REQUIRED. DEVELOPMENT ENGINEER to take charge of Laboratory work with particular reference to the development of gas domestic appliances, with particular reference to Gas Water Heaters. Preference given to applicants who hold a degree in Physics. The successful applicant would be required to reside in the London Area. The salary range would be £750 - £1,000 according to qualifications. Reply in writing to No. 9717, "GAS JOURNAL," 11, Bolt Court, Fleet Street, E.C.4.

(*Classified advertisements continued on Supplement* 4)

DESIGNERS AND JUNIOR DRAUGHTSMEN required experienced in design and detail of carbonizing plants, refractories, mechanical and steel-work details, &c. Permanent positions with good salaries to capable men. Five-day week.
Apply to GAS CHAMBERS & COKE OVENS, LTD., Artillery House, Westminster, S.W.1.

ENGINEERING GRADUATES with experience in gas industry required by major oil company operating in Persian Gulf for training as production engineers and other oilfield technicians. Good prospects. Age 25-35. Write, stating age, experience, &c., for application form to Box "H.S.," c/o J. W. VICKERS & CO., LTD., 7-8, Great Winchester Street, E.C.2.

THE Kidderminster Gas Company have a vacancy for a JUNIOR TECHNICAL ASSISTANT to carry out usual routine tests, and to assist in the Drawing Office. Preference will be given to Applicant training for a recognised Gas Engineering Examination. Apply to Percy Dougall, Gas Works, Pitts Lane, Kidderminster.

POWELL DUFFRYN TECHNICAL SERVICES, LTD., require FUEL TECHNOLOGISTS with high qualifications, with experience in modern furnace, gas producer, and boiler practice, for investigations on heat and fuel utilisation and the development of plant efficiency.
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Progressive and remunerative appointments, with headquarters at 19, Berkeley Street, W.1. Applications in writing, with chronological statement of career, to the SECRETARY, Powell Duffryn Technical Services, Ltd., 40, Lime Street, E.C.3.

A PROGRESSIVE Company in the Midlands, manufacturing Plastic Materials, requires the services of QUALIFIED ENGINEERS AND MECHANICAL AND ELECTRICAL DRAUGHTSMEN. Applicants for the engineering appointments should be at least of Higher National Certificate standard. All applicants should have some experience of mechanical or chemical plant layout and design. The vacancies offer ample opportunities of advancement for the right type of applicant. Applications, stating previous experience, positions held, and academic qualifications, should be sent to No. 9716, "GAS JOURNAL," 11, Bolt Court, Fleet Street, London, E.C.4.

TECHNICAL ASSISTANTS.

THE Cambridge University and Town Gas Light Company has vacancies for TECHNICAL ASSISTANTS. A wide experience is offered to young men with initiative who are willing to avail themselves of the opportunity. Applicants should hold at least the Ordinary Certificate of the Institution of Gas Engineers in Gas Engineering (Manufacture). Salary £300-£400 per annum according to age and experience. Applications should be sent to the undersigned not later than March 31, 1948.

J. HUNTER RIOCH,
52, Sidney Street, Managing Director.
Cambridge.

SHIFT SUPERINTENDENT.

A SHIFT SUPERINTENDENT is required by the Cambridge University and Town Gas Light Company. The appointment provides a good opportunity for young men to acquire experience of responsibility for the operation of a wide variety of plant. Some knowledge of vertical and horizontal retorts, water gas and by-product plant is desirable. Candidates should possess at least the Ordinary Grade Certificate of the Institution of Gas Engineers in Gas Engineering (Manufacture). The salary will be in accordance with age and experience and the person appointed will be required to work the normal rotating six-shift week. Applications should be sent to the undersigned not later than March 31, 1948.

J. HUNTER RIOCH,
52, Sidney Street, Managing Director.
Cambridge.

CITY AND ROYAL BURGH OF EDINBURGH
(GAS DEPARTMENT.)
ENGINEERING DRAUGHTSMAN.

APPLICATIONS are invited for the position of ENGINEERING DRAUGHTSMAN at the Granton Works of the undertaking.
Candidates must be capable of preparing specifications and drawings for gas-works plant and structures, and of supervising and directing construction and erection work carried out by the Department and by plant contractors. Candidates are required to possess the Higher National Certificate of the Institution of Mechanical Engineers, or an equivalent qualification. Previous experience in the gas or chemical engineering industries will be considered an advantage.
Salary will be in accordance with Grade IV of the A.P.T. Division of the National Scale of Salaries, commencing at £480 per annum, rising to £525 per annum, inclusive of bonus of £60.
The appointment will be subject to the Corporation superannuation scheme, and the successful candidate will be required to pass a medical examination.
Applications, stating age, training, qualifications, and experience, accompanied by *copies* of not more than three recent Testimonials, should be made to the undersigned not later than the first post on Monday, April 12, 1948.

15, Calton Hill, Edinburgh, 1. DUNCAN D. MELVIN,
March, 1948 Engineer and Manager.

CORPORATION OF THE CITY OF ABERDEEN
DISTRIBUTION ENGINEER.

APPLICATIONS are invited for the post of DISTRIBUTION ENGINEER in the Corporation Gas Department, Aberdeen.
Applicants must be corporate members of the Institution of Gas Engineers or of an engineering institution of similar status, and experienced in the design and carrying out of gas distribution work, the organization of stores and workshops and the control of staff and workmen.
The candidate selected will be required, under the City Gas Engineer, to assume full responsibility for the day to day control of the Distribution Department of the Gas Undertaking.
The salary of the post will be in accordance with Grade VII of the A.P.T. Division of the Scheme of Salaries and Conditions of Service adopted by the National Joint Industrial Council for Local Authority Services in Scotland, £575-£650, plus war increase at the rate of £60 per annum.
The post is superannuable and the candidate selected will be required to pass a medical examination before appointment.
Applications, stating age, qualifications, present appointment and experience, accompanied by a *copy* of each of three recent Testimonials, must be lodged with H. S. Milne, City Gas Engineer, Cotton Street, Aberdeen, on or before Saturday, April 10, 1948.

Town House, Aberdeen. J. C. RENNIE,
March 4, 1948. Town Clerk.

CITY OF MANCHESTER
(GAS DEPARTMENT.)

APPLICATIONS are invited for two COOKERY AND HOME SERVICE DEMONSTRATORS at a salary in accordance with the National Scales of Conditions of Service of the National Joint Council, Miscellaneous Division, *i.e.*, £315, rising to £360 per annum (consolidated).
Applicants should possess a recognized diploma in Domestic Science and be capable of demonstrating cookery, laundry and other home service subjects.
Applications, with full details of age, present occupation, qualifications, and experience, together with *copies* of two recent Testimonials, should be addressed to the Commerical Manager and Secretary, Gas Department, Town Hall, Manchester, 2, so as to be received not later than Monday, March 22, 1948.
Envelopes should be endorsed "Cookery Demonstrators" in the top left-hand corner.
The successful candidates will be required to pass a medical examination before the appointments are confirmed and to contribute to the Corporation's superannuation fund.
Copies of applications must not be sent to any member of the City Council. Canvassing in any form, oral or written, direct or indirect, is prohibited and will be regarded as a disqualification.

PHILIP B. DINGLE,
Town Hall, Manchester, 2. Town Clerk.
March, 1948.

CITY OF MANCHESTER
(GAS DEPARTMENT.)

APPLICATIONS are invited for the position of WORKS SUPERINTENDENT at the Rochdale Road Works of the Gas Department.
The appointment is subject to the Conditions of Service and Salary Scales of the National Joint Council, the salary being in accordance with Grade V of the A.P. & T. Division, *i.e.*, £520 per annum, rising to £570 per annum (consolidated).
The appointment will include, when available, house, coal and gas, the value of which are included in the salary.
Applicants should have practical experience in the operation of vertical retort plant, benzole plant and concentrated liquor plant, with ability to supervise all maintenance work and take charge of the works in the absence of the Manager.
Applications, endorsed "Works Superintendent," furnishing details of experience and technical qualifications and accompanied by *copies* of two recent Testimonials, should be delivered to the Commercial Manager and Secretary, Gas Department, Town Hall, Manchester, 2, not later than Monday, March 22, 1948.
The successful candidate will be required to pass a medical examination before the appointment is confirmed and to contribute to the Corporation's superannuation fund.
Copies of applications must not be sent to any member of the Gas Council. Canvassing in any form, oral or written, direct or indirect, is prohibited, and will be regarded as a disqualification.

Town Hall, Manchester, 2. PHILIP B. DINGLE,
March, 1948. Town Clerk.

CITY OF MANCHESTER
(GAS DEPARTMENT.)

APPLICATIONS are invited for the position of ASSISTANT MAINS SURVEYOR in the Distribution Section of the Gas Department.
The appointment is subject to the Conditions of Service and Salary Scales of the National Joint Council, the salary being in accordance with Grade I of the A.P. & T. Division, *i.e.*, £390 per annum, rising to £435 per annum (consolidated).
Candidates should have practical experience in the distribution of gas and be able to supervise the work of employees engaged in main and service laying.
Applications, endorsed "Assistant Mains Surveyor," giving details of experience and technical qualifications, accompanied by *copies* of two recent Testimonials, should be delivered to the Commercial Manager and Secretary, Gas Department, Town Hall, Manchester, 2, not later than Monday, March 22, 1948.
The successful candidate will be required to pass a medical examination before the appointment is confirmed and to contribute to the Corporation's superannuation fund.
Copies of applications must not be sent to any member of the Gas Council. Canvassing in any form, oral or written, direct or indirect, is prohibited, and will be regarded as a disqualification.

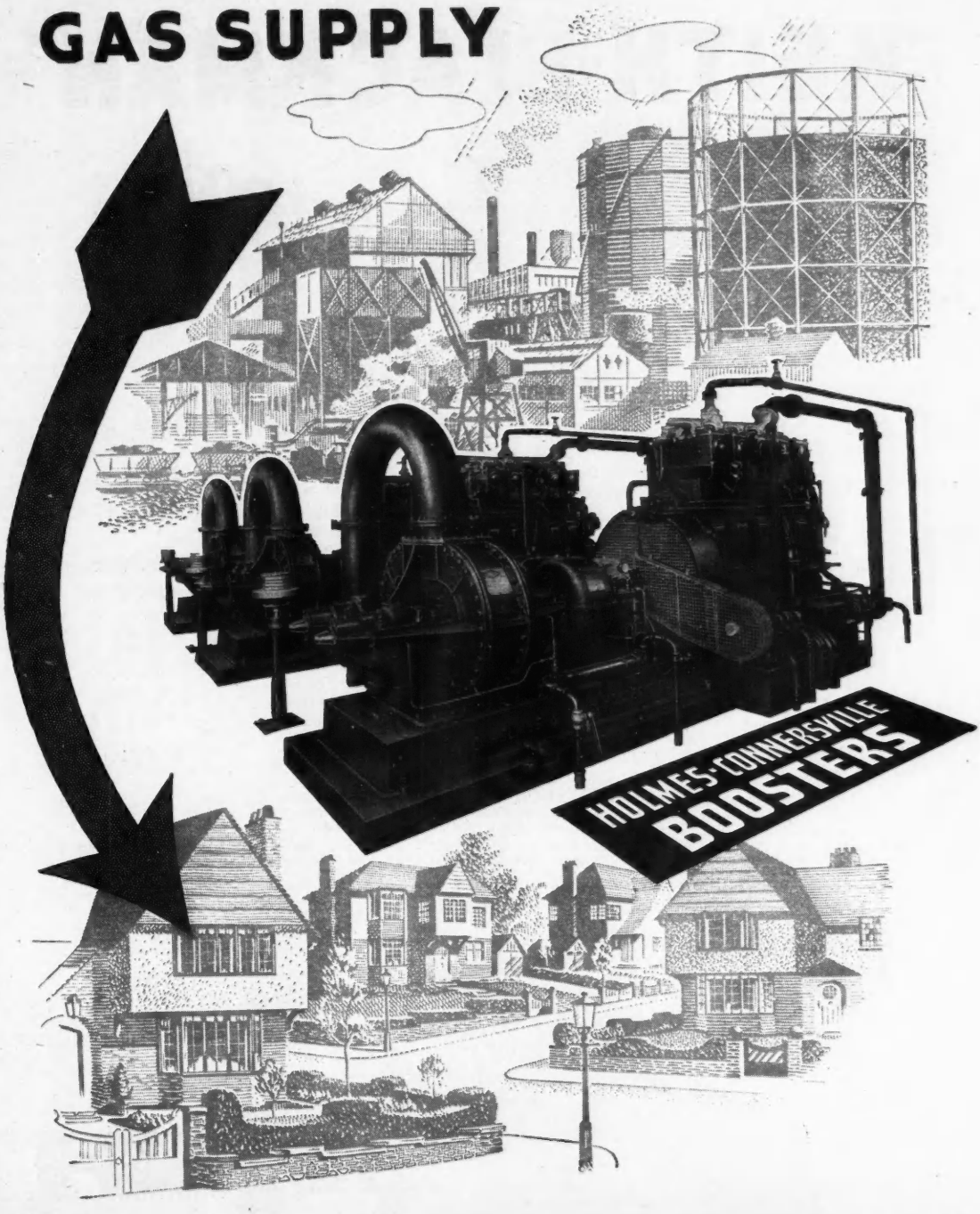
Town Hall, Manchester, 2. PHILIP B. DINGLE,
March, 1948. Town Clerk.

CITY OF SALFORD
(GAS DEPARTMENT.)
APPOINTMENT OF INDUSTRIAL SALESMAN.

APPLICATIONS are invited for the position of INDUSTRIAL SALESMAN in the Gas Department.
Applicants must hold recognized qualifications and have had wide experience in the application of gas for industrial purposes.
The salary will be in accordance with Grade III of the National Joint Council Scales of Salaries, minimum £450 per annum, rising by £15 to a maximum of £495 per annum, and the appointment will be subject to the conditions of the National Joint Council, to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.
Applications, stating age, experience, particulars of past appointments, together with *copies* of three Testimonials, should be addressed to the Gas Engineer, Gas Offices, Bloom Street, Salford, 3, Lancs. The envelope should be endorsed "Industrial Salesman," and applications should be forwarded within 14 days of the appearance of this advertisement.
Canvassing, directly or indirectly, will be a disqualification.

H. H. TOMSON,
Town Clerk.

GAS SUPPLY



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WE make all types of Fans—"High Efficiency" for boosting or exhausting gas up to 3 lbs. p.s.i. and for volumes from 5,000 to 1,500,000 cfph; Cast Iron and Steel-plate "Pressure" fans for up to 2 lbs. p.s.i. air blast to furnaces, forges, water gas plants, burner equipment, etc; "Turbo" fans for applications requiring up to 6 lbs. p.s.i.; "Centrifugal" fans for draught on boiler fires to ensure economical steam production, or for cold air douche to workers in retort houses, etc.; "Centrifugal" or "Axial-flow" fans for supplying ventilating air through ductwork; "Propeller" fans for moving air in volume for ventilating; "Propeller" fans on portable structures for cooling workers at furnace fronts; and "Tenaxe" fans for re-circulating high temperature gases and air in various types of heat treatment furnaces.

WHEN you need fans for moving air or gases give us an opportunity of making practical suggestions.

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LEEDS, 1: 40/41 Royal Exchange Chambers. TN: Leeds 27286. NEWCASTLE-ON-TYNE 1: 21 Mosley St. TN: Newcastle 22284.
SCOTLAND: 90 Mitchell Street, Glasgow, C1. TN: Central 7973. IRELAND: 7 Brunswick St. Belfast. TN: Belfast 21114.
SOUTH WALES: 127 Stanwell Road, Penarth, nr. Cardiff. TN: Penarth 249.

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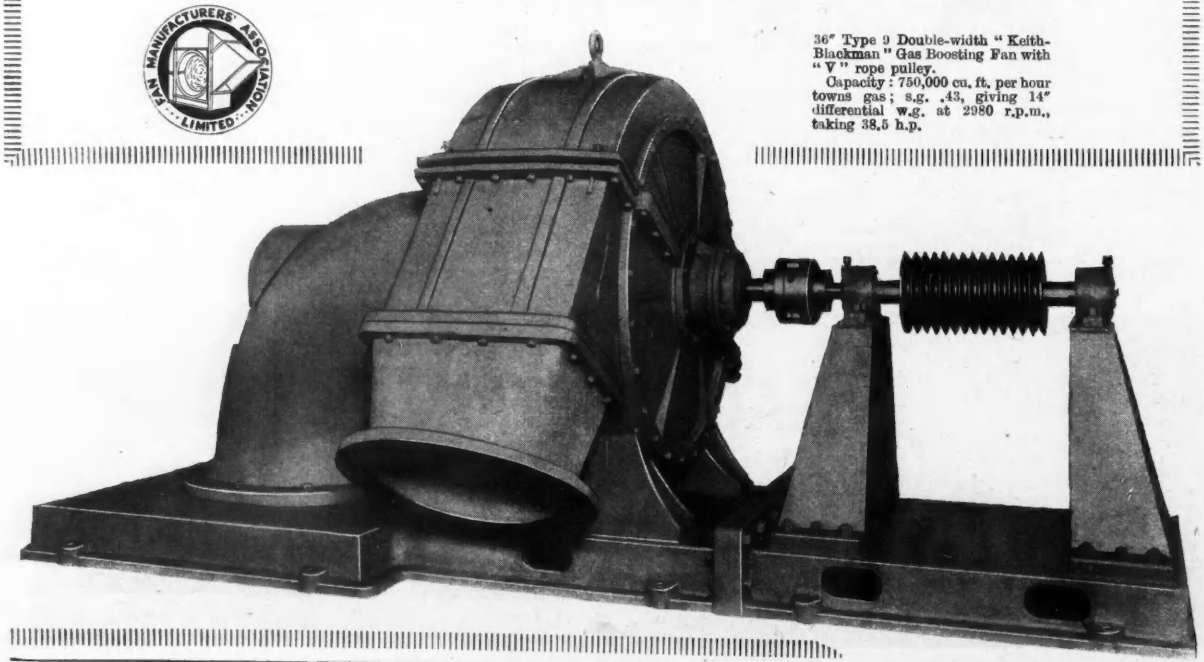

36" Type 9 Double-width "Keith-Blackman" Gas Boosting Fan with "V" rope pulley.
Capacity: 750,000 cu. ft. per hour towns gas; s.g. .43, giving 14" differential w.g. at 2980 r.p.m., taking 38.5 h.p.

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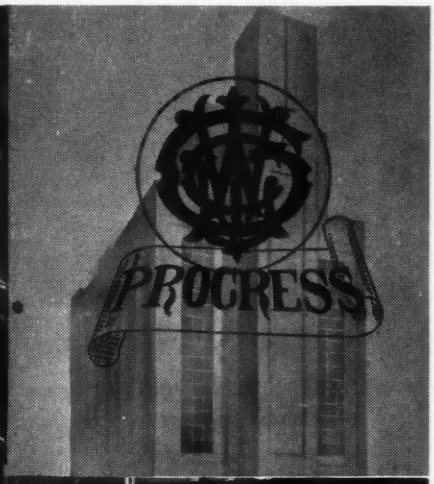

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GAS IMPROVEMENT CO. LTD.

Miles Platting

MANCHESTER 10

Telephone: COLlyhurst 2961-2-3-4-5

Telegrams: Stoker, Manchester

London Office:

COLUMBIA HOUSE, ALDWYCH, W.C.2

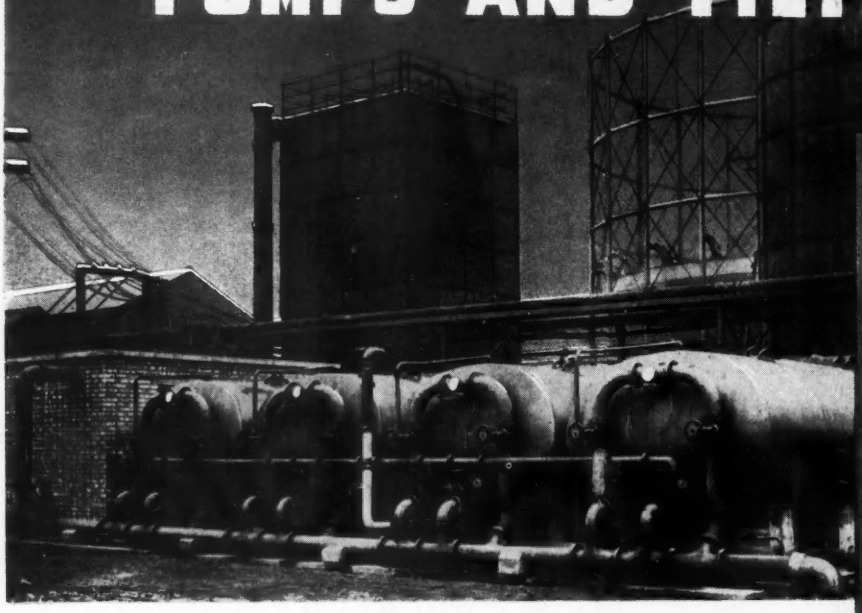
Telephone: HOLborn 4108-9

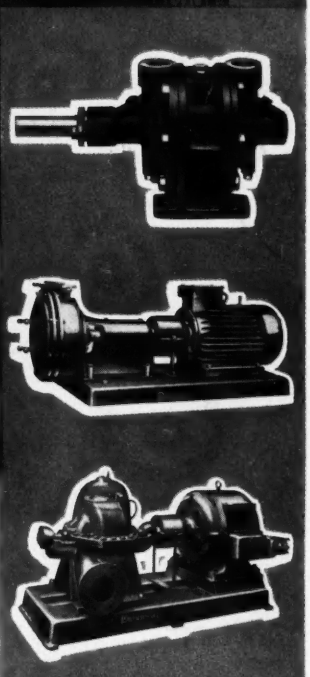
Telegrams: Wesgasco, Estrand

A

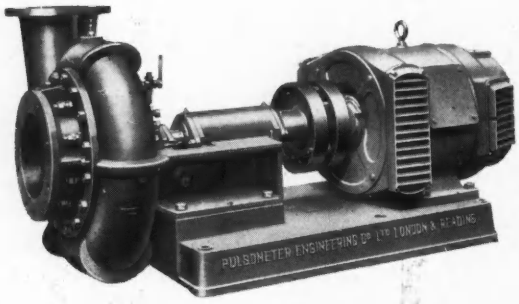
Pulsometer

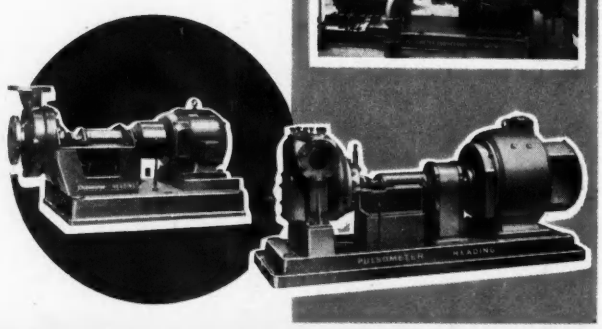
PUMPS AND FILTERS





Centrifugal pumps for light and heavy oil and liquor transfer duties, Stoneware and pumps in special metals for handling acids and alkalis, circulating and washer duties, clean water and fire service and liquids containing abrasives





PULSOMETER ENGINEERING Co. LTD. NINE Elms, READING